PACKAGE engineering

Here's the word on polystyrene film

Laying the groundwork for a discussion of this material's physical properties and applications by examining its plasticizing, stretching, orientation and its related problems. (See page 21)

Let your "deals" roll into high gear

Two advocates of automatic assembling of "deal" package components tell what it takes to do this with peak efficiency and show how this is neither costly nor inflexible. (See page 28)

How we stockpile packaging executives

Reviewing our government's development of the National Defense Executive Reserve and the job it will do during an emergency—with a directory of packaging men who are already its participants. (See page 50)

Complete table of contents on Page 2

JUNE 1958

VOLUME 3 • NUMBER 6

All dressed up for more and better sales.....and Gift-Wrapped by Scandia Machines.
Giving you 20 years' experience in Holiday and Special Events Packaging!

SCANDIA
PACKAGING MACHINERY COMPANY
NORTH ARLINGTON N. J.

Makers of Standard and Custom Machines for Bundling · Banding · Multiple Wrapping · Stamping · High-Speed Wrapping

CHARTING NEW PATHWAYS IN PACKAGING

For more information circle No. 201 on Reader Service Card

Packaging
Protection for

SEASON-TO-SEASON SHELF LIFE

Surely, in June, Christmas is far from the consumer's mind.

But it's different with the famous Dennison Manufacturing Company of Framingham, Massachusetts—one of the world's leaders in the manufacture of Christmas tags and stickers.

And Dennison knows its outlets will have some carry-over stocks come close of business on Christmas Eve—inevitable if proper inventories are to be maintained.

But Dennison dealers—unlike many—do not have to resign themselves to losses incurred by broken packages and the soiled sales appeal frequently encountered in the holdover of such seasonal items.

You see: All Christmas seals and tags by Dennison are packaged in VITAFILM—the outstanding Goodyear transparent film which has the kind of "stay-fresh" stamina it takes to carry goods *all the way* from factory to ultimate sale.

Why so good? VITAFILM seals to a positive welded seam which won't fail the product it protects. And VITAFILM withstands temperature changes, customer handling and other hazards which cause many packages to shatter, split and run.

Beyond all this, VITAFILM presents no affinity to dust. It remains crystal clear, a clear-cut case of sales appeal.

Wouldn't your product gain from such preferred treatment? The cost is rock-bottom, and the reasons for using no other film but VITAFILM are sheer solid fact. Write: Goodyear, Packaging Films Dept. R-6432, Akron 16, Ohio.

Vitafilm BY GOODYEAR

60th ANNIVERSARY

The best thing you can place between you and your customer!

Vitafilm, a Polyvinyl chloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

JUNE 1958 • VOLUME 3 • NUMBER 6

PACKAGE engineering

AN ANGUS J. RAY PUBLICATION

For your calendar

June 4-6. AMA Workshop Seminar, New York, "Specifications—Writing Packaging Specifications: Formed Plastic and Flexible Packaging." Contact: E. King Graves, American Management Association, 1515 Broadway, New York 36, New York. *Telephone: Judson 6-8100.*

June 11-13. AMA Workshop Seminar, New York, "Research—Packaging Research and Its New Sciences." Contact: E. King Graves, American Management Association, 1515 Broadway, New York 36, New York. *Telephone: Judson 6-8100.*

June 18-20. AMA Workshop Seminar, New York, "Department Head—The Job of the Department Head." Contact: E. King Graves, American Management Association, 1515 Broadway, New York 36, New York. *Telephone: Judson 6-8100.*

June 2-4. AMA Workshop Seminar, New York, "Controls & Goals for Research." Contact: E. King Graves, American Management Association, 1515 Broadway, New York 36, New York. *Telephone: Judson 6-8100.*

August 11-13. Western Packaging & Materials Handling Exposition, San Francisco Civic Auditorium. Contact: Exposition Office, 759 Monadnock Building, San Francisco 5, California. *Telephone: Douglas 2-7876.*

September 30, Oct. 1-2. Fourth Joint Military-Industry Packaging and Materials Handling Symposium, sponsored by the Department of the Navy in cooperation with other military departments and the Department of Commerce, in Washington, D.C. Contact: Head, Packaging Section, Supply Programs Division, Office of Naval Material, Washington 25, D.C. *Telephone: Liberty 5-6700, Ext. 61061.*

October 13-15. Packaging Institute, 20th Annual Forum, Edgewater Beach Hotel, Chicago, Illinois. Contact: Charles A. Feld, executive director, Packaging Institute, 342 Madison Avenue, New York 17, New York. *Telephone: Murray Hill 7-8875.*

October 14-16. Society of Industrial Packaging and Materials Handling Engineers, 13th National Industrial Packaging and Handling Exposition, and SIPMHE short course, Chicago Coliseum, Chicago, Illinois. Contact: C. J. Carney, managing director, Society of Industrial Packaging and Materials Handling Engineers, Suite 1534, 14 E. Jackson Blvd., Chicago 4, Illinois. *Telephone: Harrison 7-6123.*

Articles

21 A close look at polystyrene film, by R. J. McCormick, plastics technical service, The Dow Chemical Company

The first part of a two-part article on this new material, focusing attention on its plasticizing, orientation, and stretching—preparatory to looking at its physical properties and applications in the second part, appearing next month.

28 Wheeling & dealing: Let's mechanize our deal type operations, by Leslie W. Smith, finishing department head, and J. Leland Smith, technical assistant to department head, Bristol-Myers Company

Evidence that far from being costly and inflexible, mechanized "deal" packaging permits peak efficiency in the automatic assembling of package components through development of special machinery combinations and training of crew members to make the most of this equipment.

38 Reducing the number of packaging items for automatic washers

Development by The Maytag Company of a technique for holding a part rigid within a washer during shipment led to the finding of new packaging methods and material utilization, thus saving $45,000 a year.

50 Packaging's part in the National Defense Executive Reserve, by Charles A. Lewis, director, containers and packaging division, Business and Defense Services Administration, U. S. Department of Commerce

What the government is doing to provide a stand-by emergency organization for possible full or partial mobilization, what its manpower needs are, and a directory of containers and packaging reservists already participating in the program.

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Reader Service Card inside back cover

Our December 1958 issue will carry a cumulative editorial index for the year listing our feature articles by subject, author, and other headings.

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Fast to find hidden clues to savings in packaging . . . that's your G-Man*. Just call him to the scene; he'll pick up the trail from there. He comes up with refreshing new solutions to protection, packing, shipping problems . . .with corrugated boxes.

Whether you need regular containers in big volume or specially engineered packaging, call in this modern Sherlock now. He's keen-eyed, ready—and nearby.

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Gaylord Boxes

HEADQUARTERS, ST. LOUIS
PLANTS COAST TO COAST

DIVISION OF **Crown Zellerbach Corporation**

A note from the Publisher

Two segments of the packaging field that always have been most advanced are food and drugs. They not only were first to recognize the value of packaging in any form, but were first to capitalize on the fact that packaging can and does influence plant operation. They found that frequently the economies resulting from a package that runs well on a packaging line indicates that it will also sell well.

It is significant that these two industries have been the bright spots in the first quarter earnings statements that were released during April. Through consistent attention to mechanization they give good value.

The combination of rising labor costs plus buyers looking for their "dollar-value" creates the healthy state in which the manufacturers of packaging machinery find themselves today, but sometimes I think that because the word "automation" is currently popular, and because there is a mounting pressure to cut costs, a company occasionally buys machinery that is unsuitable for its particular set-up. Automation, *per se*, is *not* the answer to everyone's problem; actually, the need for packaging machinery should be weighed against two factors:

1. Plant personnel.
2. Other equipment.

As an example, a manufacturer told me of a company that bought one of their fastest and most complex machines. The machine was installed and ran exactly as it was supposed to run. However, the installation engineer had no sooner returned to the home factory when the customer was on the phone with the complaint that the equipment was not running at its rated speed. This went on for some time, and finally the packager was persuaded to use a slower and less complex machine—and the difficulty stopped. His real problem was not in a deficiency of the machine, but in not having the personnel capable of running the machine.

Similarly, one hears numerous instances of machinery running perfectly at one plant and giving trouble at another plant, although the produce is identical and the packages are supplied by the same converter. Here again, the difficulty can usually be traced to one of the two factors mentioned—namely, personnel.

A related point that bears deliberate consideration is the speed of other pieces of equipment in the line. It is hard to believe, but I have heard of high-speed equipment being run at five-minute intervals because it was so advanced over other pieces of equipment in the line, thereby defeating its own purpose.

A number of years ago a machine was developed that would form rigid transparent boxes from rolls of plastic sheeting. The machine worked fine, except that one machine could turn out more boxes in a week than the entire packaging industry was consuming in a year. Needless to say, there was not a market for this piece of equipment at that time.

To operate profitably, a packaging line must be kept modern and efficient, but the choice of equipment needed to achieve this status should be related to the ability and training of your plant personnel, the speeds of all other equipment in your line, and your expected sales volume.

Angus J. Ray
Publisher

PACKAGE engineering

AN ANGUS J. RAY PUBLICATION

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FORM, FILL, SEAL AUTOMATICALLY

PILLOW-PACKAGING CUTS COSTS

Does your product belong in this picture? It does if automatic packaging can save you money. Doesn't matter whether you package solids, powders, granules or liquids . . . Robo-Wrap heat seals them in a single or double wall of cellophane, paper, polyethylene, Foil Laminates, Mylar or Saran. Hand-over-hand method forms, fills and seals packages from a continuous roll for highest efficiency. Robo-Wrap changes package size quickly, too. Write for booklet that gives facts on low maintenance and higher efficiency.

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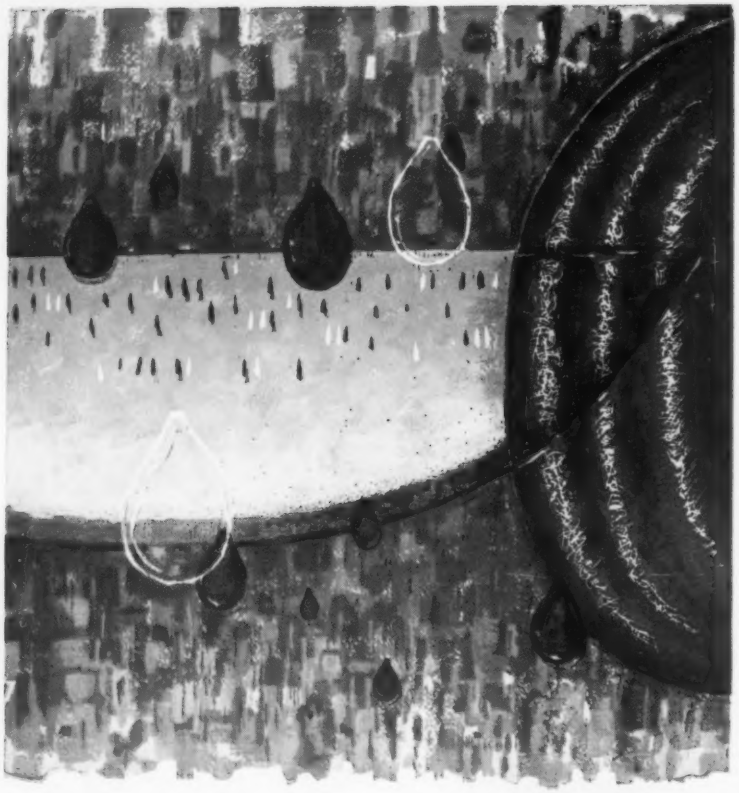


Nature's packages are perfect for the job . . . how about yours?

The watermelon, being about 98 percent water, needs a special kind of protective shell to enable it to withstand the rigors of its sun-baked environment until its flavorful contents are ready for delivery. An ordinary packaging engineer might have thrown up his hands on this assignment, but Mother Nature did the job—and as every fancier of this Dixie delicacy knows, did it to perfection!

When you have the right materials to work with, almost any packaging job is easier. That's why manufacturers of precision instruments, missile components and other fragile items are specifying urethane foam as their protective packaging material. Available now in a wide variety of densities to meet packaging engineers' objectives, urethane foam is a highly-resilient cushioning material with amazing shock-absorbing capacity, affording the best combination of such qualities as tensile and tear strength, moldability, reusability and ease of fabrication and handling.

If breakage, abrasion, intricacy of shape, weight or cost are listed among your packaging problems, urethane foam may be your easy answer. Get the full story today from Mobay Chemical Company, Dept. PE-7, Pittsburgh 34, Pa.

Mobay is the leading supplier of quality chemicals, product development and technical assistance, to manufacturers of urethane foam for industry.

MOBAY
First in Urethane Chemistry

Letters to PACKAGE engineering

Re: Research

Gentlemen:

I would like to congratulate you on your very fine editorial "Let's Take a Fresh View of Research." You have done an excellent job of pinpointing some very basic problems.

We at Koppers have been taking a good hard look at the packaging field for sometime. We have been a little concerned about the best way we can move and have been plagued by many of the problems you mention. How much should we do? How much will be duplication of work done by the converter and packager? These are difficult questions to answer because of the wide variety of tests utilized and also by the relative importance placed on them by the various people concerned.

We have come to one of the conclusions you mentioned. Back to the literature and then on from there.

James B. Gordon
Plastics Application Representative
Koppers Company, Inc.
Pittsburgh

Using recorded, cumulative knowledge from past research, a company may "go on from there" and aim its own research at new targets—not hit by prior efforts.

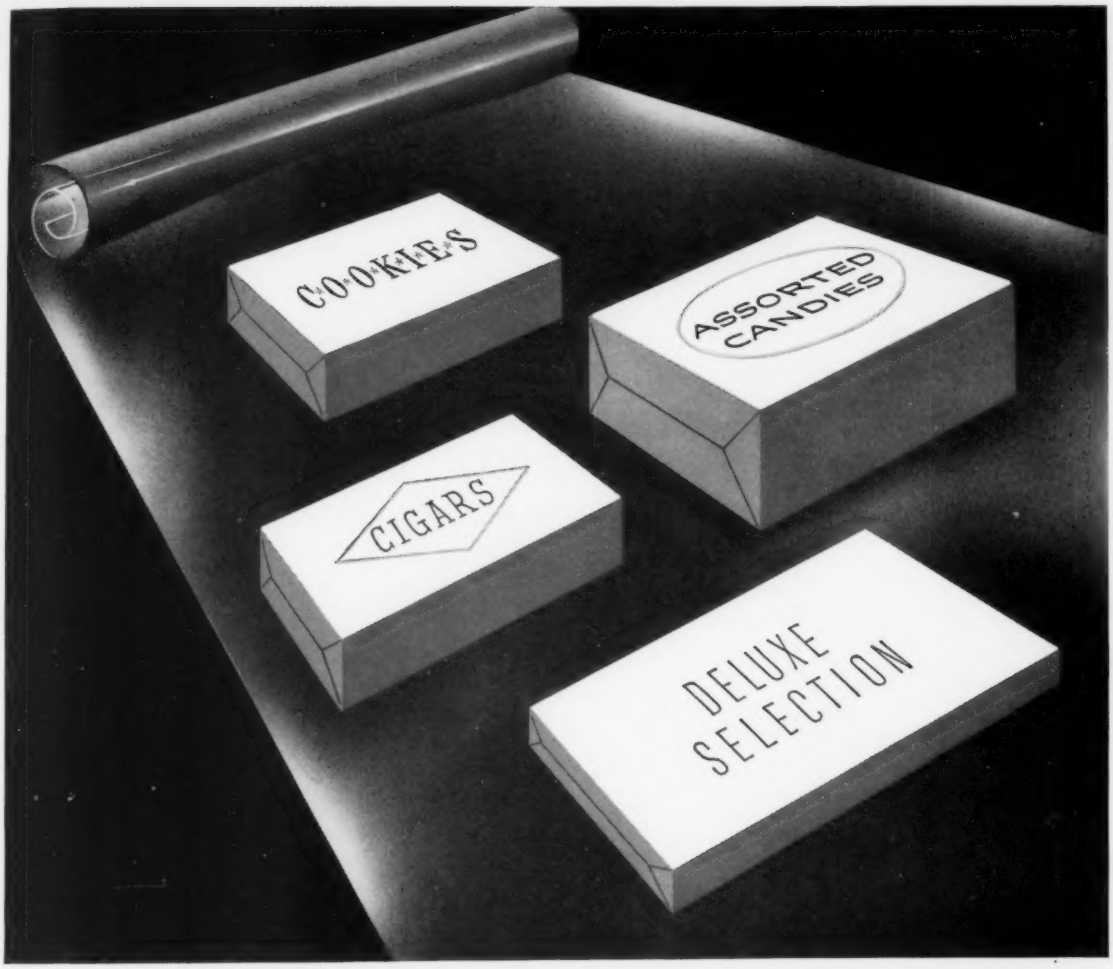
Re: New reader's comment

Gentlemen:

I received my first issue of PACKAGE ENGINEERING. It's brief, interesting, and worth reading. Thank you.

A. R. Biamonte
Lambert-Hudnut
Div. of Warner-Lambert
Pharmaceutical Co.
Morris Plains, New Jersey

Thank you, Mr. Biamonte.



NOW...WRAP WITH POLYETHYLENE

on the fast, versatile PACKAGE Model FA-2

All the advantages of neat, attractive wrapping *using polyethylene* are now available on Package's Model FA-2. This widely-used machine now handles polyethylene films, at speeds from 30 to 60 packages a minute. Special features have been added to assure trouble-free operation.

All FA-2 parts in contact with the poly-covered package are Teflon-coated to prevent drag. A long-seam bar sealer eliminates stationary bottom heaters. Thin Fiberglas belts—an exclusive Package application—cover flexible side heaters and coolers, assure fast, positive sealing of the double-point end folds. Special thermostats give accurate temperature control, and electric static eliminators are attached to the paper feed.

Add the longer shelf life and greater moisture protection of polyethylene by wrapping on the versatile FA-2. Its special new features are another advance by Package engineers, who in the past have pioneered many of the methods of handling polyethylene used throughout the industry today. For full details on the Model FA-2, contact your Package representative.

PACKAGE MACHINERY COMPANY, EAST LONGMEADOW, MASSACHUSETTS

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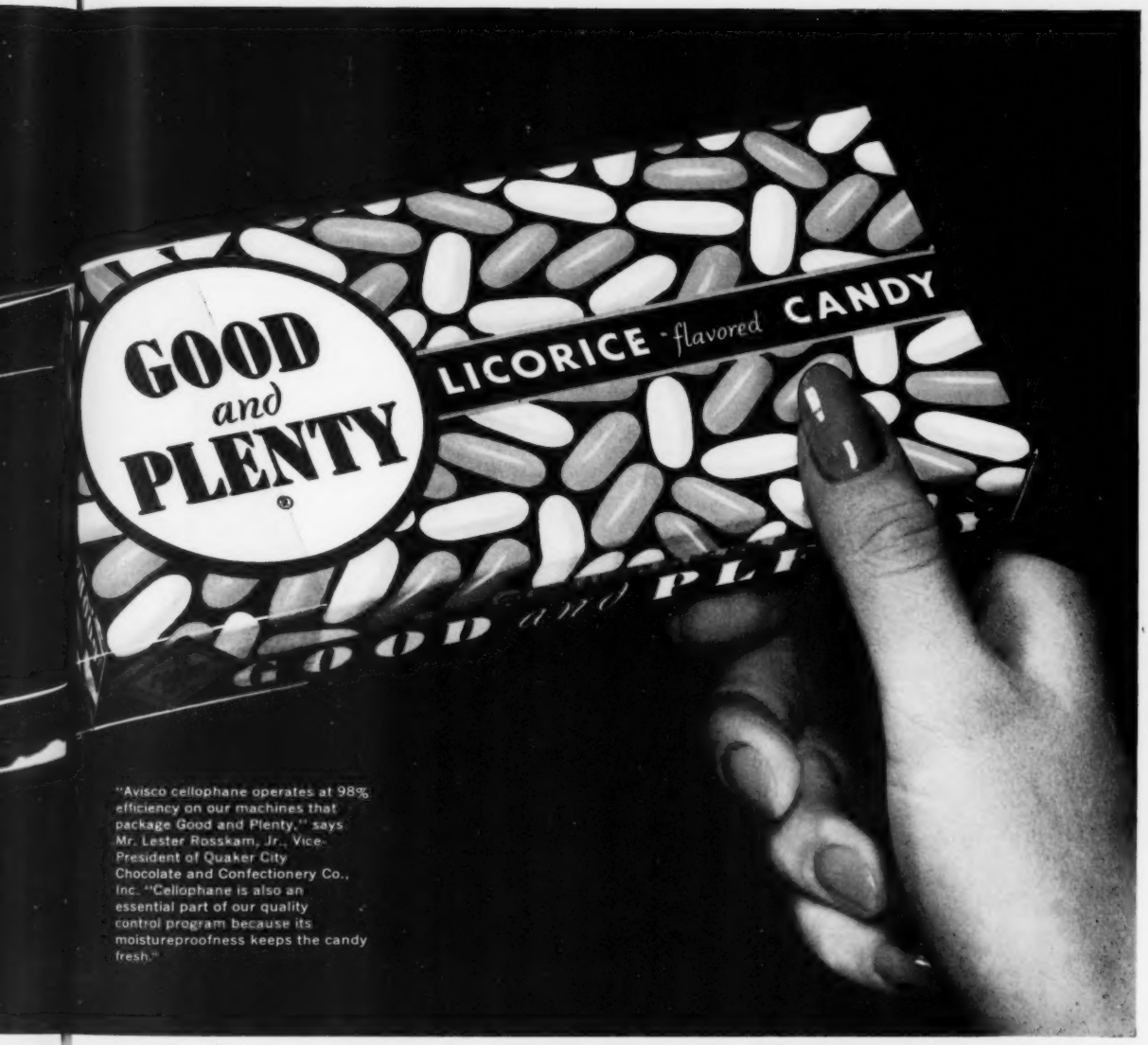
PACKAGE

...YOU GET IT WITH

Uniform, gusseted, flawless bags of Avisco cellophane are made by Milprint, Inc., Paramount Packaging Corp., and Boyertown Packaging Service Corp. for San Giorgio Noodles.

High speed machines at Regina Cigar Co. wrap Havana Palmas in Avisco cellophane. The gusset fold is simple because of cellophane's body. Packages feature a cellophane tear strip.

Even at machine gun speeds, Avisco cellophane forms perfectly on packaging machines. The flavor-retaining overwrap of Beeman's Gum is an example. Printed by Forbes Lithograph Co.


GOOD and PLENTY
LICORICE-flavored CANDY
"Avisco cellophane operates at 98% efficiency on our machines that package Good and Plenty," says Mr. Lester Rosskam, Jr., Vice-President of Quaker City Chocolate and Confectionery Co., Inc. "Cellophane is also an essential part of our quality control program because its moistureproofness keeps the candy fresh."

AVISCO® CELLOPHANE

HERE'S WHY: Only cellophane has the crispness, body and rigidity needed to form this snugly around a package. It folds permanently and won't droop or collapse like other films. This rigidity plus the static-free property of cellophane also results in top performance on high-speed packaging machines. And nothing prints more beautifully. Add all these advantages to the low cost of AVISCO cellophane and you'll find it's a bigger dollar value than any other packaging film on the market.

AVISCO®

AMERICAN VISCOSE CORPORATION, FILM DIVISION, 1617 PENNSYLVANIA BOULEVARD, PHILADELPHIA 3, PENNSYLVANIA

What you should know about testing of Union Boxes

What's the worst p

You might try dropping it (filled) on a metal floor . . . compressing it . . . bouncing it in a revolving drum.

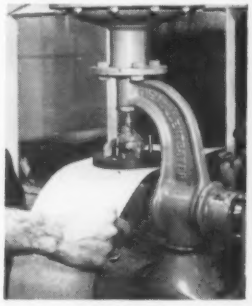
These are just a few of the ordeals corrugated board and boxes undergo before the finished container is delivered to your plant. No single one is "worst" or "best", or will give a true measure of *overall* performance. Yet each is uniquely important.

Some of these tests, made on Union Board and Boxes, are described here. They represent another part of Union's structural design service to all shippers.

1. Shock treatment

During rail or truck shipment, your box must be able to withstand the shocks of sudden stops and turns. To measure its impact resistance, filled box is shot down an inclined runway and bounced against a solid backstop.

1. Impact test



2. Mullen test

For more information circle No. 208 on Reader Service Card

punishment you can give a box?

2. The bursting "barometer"

A railroad ride can be rough experience. That's why boxes shipped this way must meet minimum standards for bursting strength of board as set by Freight Classification Rule 41. If they pass this trial, known as the Mullen Test, they're ready for the worst jolts and jerks.

3. Testing for tear

Box flaps are scored to make them fold and unfold easily at your plant and at final destination. The easier the better. But during scoring some strength at that point must be lost. How much, and how much is retained, is measured by the combined Torsion-Tear Test.

4. "Squeeze-box" hazard

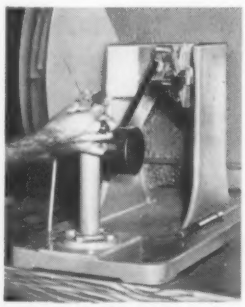
Whatever your product it will be subjected to all sorts of pressures on all sides during shipment and storage. The Compression Tester anticipates these forces. It squeezes empty box till collapse to test for rigidity and stacking strength . . . helps weed out possible trouble sources such as poor adhesion, scoring, joints and corrugations.

5. Down she goes!

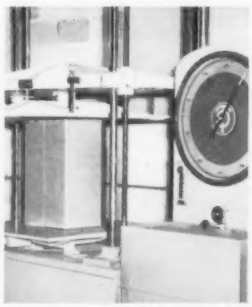
Bad falls are among the commonest causes of failure. The Drop Test—repeated flat-on-face and corner drops of loaded box on to a metal surface—provides a real gauge of the box's resistance to sudden shocks. Test also checks suitability of tape and strength of manufacturer's joints.

6. Taking a tumble

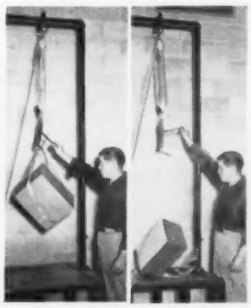
It takes a tough box to survive the Drum Test's "black-and-blue" treatment. Drum rotates, box inside tumbles against fixed metal obstacles until it finally fails. Test is an excellent gauge of the durability of facings, flutes, seams and interior packing.



3. Torsion-Tear test



4. Compression test



5. Drop test

6. Drum test

union camp

Write for new, informative booklet, "Quality Control of Corrugated Boxes."

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Crossett is not selling bleached board alone. We sell technical know-how combined with package engineering service, and machine time to produce your needs. The production time you require is assured in all markets on regular schedule.

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A NEW NAME IN AEROSOL PACKAGING EQUIPMENT

Arthur Colton Company, Detroit and Alpha Engineering Works, Inc., Mount Prospect, Illinois, have completed an arrangement under which the specialized facilities of both companies are now available in a combined product—the Colton-Alpha line of aerosol packaging equipment.

Alpha Engineering Works, Inc., pioneer in the development and packaging of pressure-dispensed products, will concentrate the resources of its engineering staff upon research and development. Arthur Colton Company, 74-year-old pioneer in the design and manufacture of high-precision, high-production machines for the pharmaceutical, chemical and packaging industries, will be responsible for manufacturing, sales and service.

The Colton-Alpha line will be a complete range of pressurized packaging units, each coordinated with each other unit in the line, giving full flexibility for change as requirements dictate. Your inquiries are invited.

ARTHUR COLTON COMPANY

DIVISION SNYDER TOOL & ENGINEERING COMPANY

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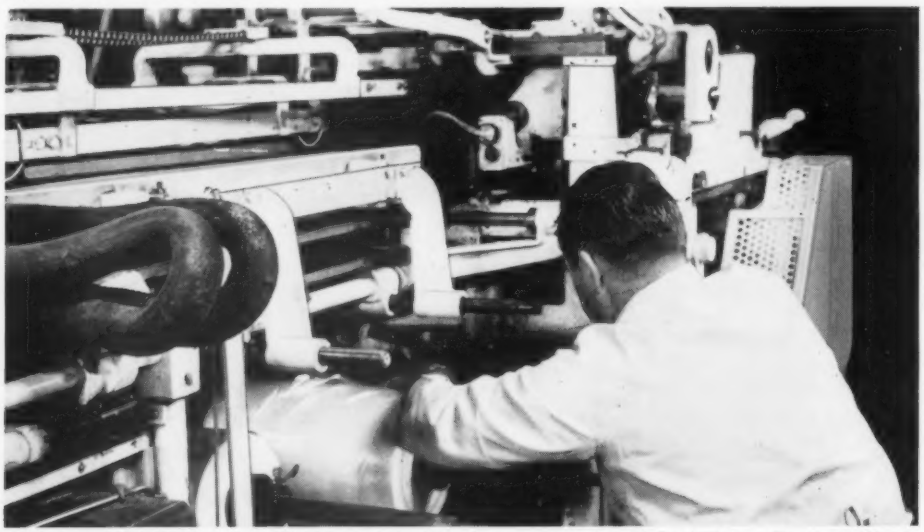
Specialists in Drug, Chemical and Filling Machinery for 74 Years

Packaging is more than "Skin Deep"!

PACKAGING PROBLEM:

Bakers have been tempted by the keeping qualities, durability and low cost of polyethylene film ever since its introduction as a packaging material. But for years the film was too cloudy to compete with transparent bread wrappers already in use, and there was no practical method of using it on standard bread wrapping machines. The polyethylene would not handle properly during the wrapping process. Then, too, the sealing range was so critical that standard equipment would either melt right through the film or else not seal at all. Finally, the film had a tendency to stick and drag on the heating elements as it passed through the machine.

For years, all attempts to solve these problems met with failure.



A Western-Waxide technician installs the first Crown-Seal conversion unit in Flubrer's Bakery, Eureka, California.

SOLUTION:

Western-Waxide, with forty years service to the baking industry, understood the potential advantages offered to the baker in free-film polyethylene. Our Packaging Research and Development Laboratory launched a concerted effort to make these advantages available to the industry.

It was decided that the problem must be attacked in three phases: (1) Develop a conversion unit for standard wrapping machines to bring the temperature under control and keep the polyethylene from sticking and dragging during the wrapping process and to ensure proper folding. (2) Formulate a polyethylene film with the required transparency, high gloss and machineability. (3) Develop end labels and outsert bands to work under the specific temperature ranges with polyethylene and form a good seal with the new material.

Prolonged experimentation and engineering led to the development of a low-cost conversion unit for A.M.F. standard or super-standard wrapping machines which eliminated the sticking and dragging problem. Temperature-control features were incorporated which resulted in ideal sealing with or without end labels and would operate equally as well with waxed paper, cellophane or polyethylene. Phase one was a success.

The Packaging Research and Development Laboratory, working closely with Spencer Chemical Company in phase two, were rewarded with the development of a specially-formulated higher density polyethylene resin. A unique method of extrusion transformed the new resin into a crystal-clear film with the right balance of stiffness and softness.

Finally, a special coating for outsert bands and end labels was developed for use with the film which ensured a strong, positive seal on the bottom and ends of the package.

The result was Crown-Seal,* the first practical free-film polyethylene package for bread.

Western-Waxide package research and development turns problems *into* profits *for* you! *These services of our packaging research and development laboratories and personnel are available to solve your packaging problems. Write or phone your nearest Western-Waxide office today.*

*Crown-Seal is a trademark of Crown-Zellerbach Corporation

CROWN ZELLERBACH WESTERN-WAXIDE DIVISION

Headquarters Office: 2101 Williams St., San Leandro, Calif. • Plants and Sales Service Offices in Principal Cities of the United States

Manufacturers and converters of plain and printed waxed paper • foil • foil laminates • polyethylene coated paper and polyfilm laminates • films • bags • pouches and other specialized flexible packaging materials

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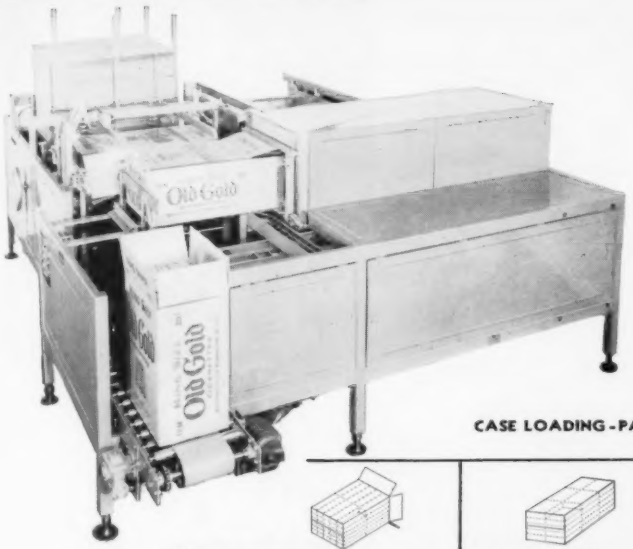
Which Packomatic solves your production line problem?

T.M. Reg. U. S. Pat. Off.

PACKOMATIC Feeder-Former-Positioner-Loader-Upender



Require a fully automatic case loader?

Here's a fully automatic case Feeder-Former-Positioner-Loader that is breaking records on actual production line conditions in a variety of industries. And by end-loading techniques, savings on paper board alone run as high as 28%. Production jumps dramatically with this high-speed, continuous-motion machine. Labor costs are lower, too, because except for hand-stacking corrugated shipping containers in flat form into the magazine, everything's automatic. Below are some of the end-loading patterns showing number and packing of cartons. Check with Packomatic engineers if your loading pattern does not appear here. Custom-engineering will produce a Packomatic for your product.

CASE LOADING-PATTERNS:

Twenty-four cartons in 12½" x 10⅝" x 8½" case

Eighteen 7 & 8 oz. cartons in 20" x 14⅞" x 8⅝" case

Sixty cigarette cartons
King Size: 17⅞" x 11½" x 22"
Regular: 14-13/16" x 11½" x 22"

Thirty 1 lb. cartons in 16⅛" x 10⅝" x 7¼" case

Twenty-four cartons in 19½" x 10⅞" x 7" case

Forty-eight cartons in 22¾" x 23½" x 15⅞" case

PACKOMATIC
Fully-Automatic Case Loader

CASE LOADING-PATTERNS:

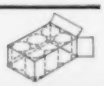
handles any can from the 12 oz. to the 5-qt. Imperial

Six 5-qt. cans or gallon cans in 20 ⅛" x 13⅝" x 9 13/16" case and 20 ¼" x 13¾" x 8¼" case.

Twelve 46 oz. cans in 21" x 13" x 7⅞" case

Twenty four 12 oz. cans in 16⅞" x 10 5/16" x 5 3/16" case

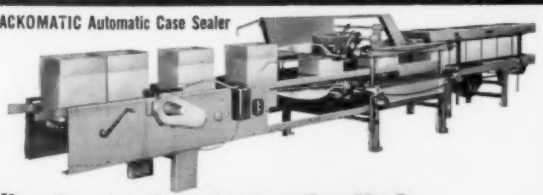
Six No. 10 cans in 22 1/16" x 17⅜" x 7⅛" case



Want a high speed can line?

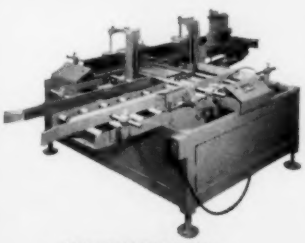
Keep pace with your production line. Now, feed-form-position-load and seal your corrugated shipping containers at high-speeds — up to 720 cans a minute — automatically. This is accomplished with a smooth continuous motion to eliminate jarring and bumping of cans that causes leakers and mars labels or lithographing. Machines in successful operation across the nation (Packomatic was **first** with a successful production-line machine) end-load a variety of can sizes — from six 5-quart cans to twenty-four 12-oz. cans — in such patterns shown at left. End-loading reduces paper board costs. Automation saves labor costs. From corrugated flats to sealed containers, only one part-time attendant is required. Consider this time-money saver for your plant. We can custom-engineer a machine like this for you.

PACKOMATIC Automatic Case Sealer



Like to seal automatically?

Here's the machine for you — the **first** fully automatic case sealer proven under actual production line conditions. No operator needed to align corrugated cases, open flaps, glue, seal and discharge ready for shipment. Adjustable to a wide range of case sizes. Similar models, available semi-automatic.



PACKOMATIC 4-Side Case Imprinter with serial numbering device.

Need 4-Side Imprinting

Prints either or both sides and ends of corrugated shipping containers with name and contents — in addition to imprinting a serial number. Very essential if using modern palletizing methods. The only machine of its kind. Other regular models available for minimum case imprinting requirements. Write for specs and prices.

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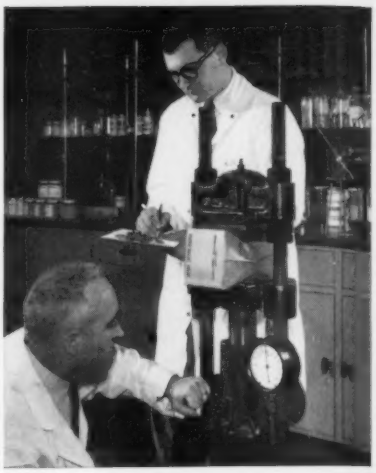
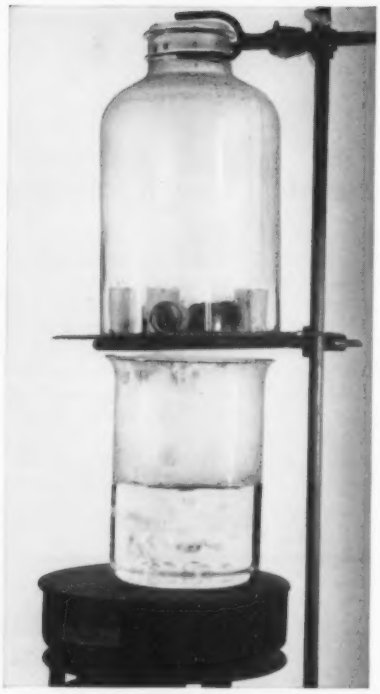
NEW YORK, CHICAGO, CLEVELAND, BOSTON, TAMPA, BALTIMORE, PORTLAND, DENVER, LOS ANGELES, SAN FRANCISCO, SEATTLE.



210-pound squeeze! Seban AR-2—case-sealing adhesive—withstands extreme pressure. Compression test proves Seban can take almost any amount of palletizing—more than 200 pounds—and still hold, even when the case breaks down. Choose Seban when great bonding strength is important.

Seban will pass your toughest sealing test



36 minutes in live steam! Seban AR-5—tube-winding adhesive—resists both heat and moisture in sterilization of paper tubes for surgical products above. Steam pours into bell jar without delaminating tubes sealed with Seban—not even after 36 minutes. Choose Seban for great resistance to heat and moisture.

In test after test, Seban proves itself capable of meeting almost every packaging situation. Now this new line of polyvinyl resin packaging adhesives from Armour is ready to help you solve your toughest package-sealing problems.

Seban has been proved superior for CARTONS—WINDOW BOXES—CASES—FOLDING CARTONS—TUBES—BAGS—and others. In every instance Seban helps get increased production and better sealing results.

We urge you to have your own laboratory test Seban. Why take chances on an ordinary adhesive doing an ordinary sealing job when Seban has been proved superior?

If you use one of the following machines, a special grade of Seban will help you utilize your equipment to the fullest efficiency.

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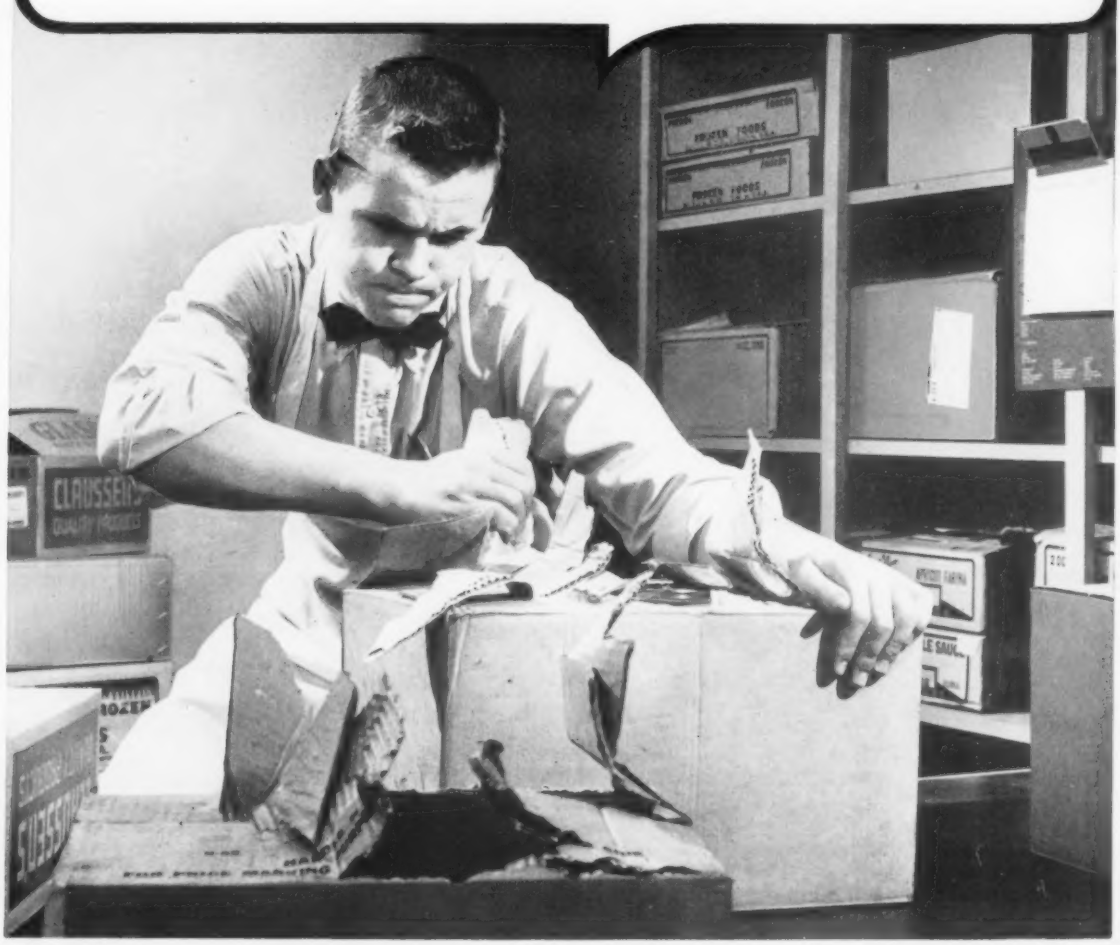
Man, it just isn't *safe* to open these cartons. A guy either gets stuck on a staple . . . or slashes the can when he cuts the carton. The cartons sealed with one strip of reinforced tape — those are the ones I like.



When the convenience of an easy-to-open carton is important to you and when you want super-strong shipping protection, order Glassweb reinforced-with-glass tape. The economy of *one* pass, one strip sealing means savings in the Shipping Department. The ease of opening will keep customers happy, too. Order Glassweb and let it prove itself.

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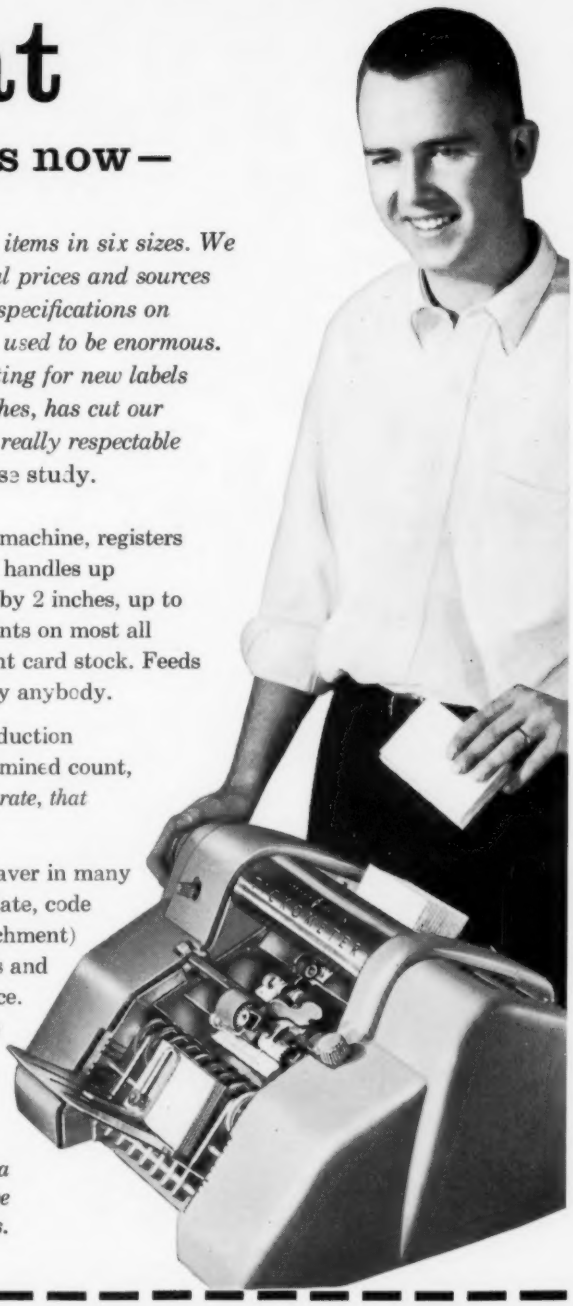

"We have a hefty product line, with some items in six sizes. We also put out some private brands. As material prices and sources change from time to time, we have to change specifications on our labels—and our waste of unusable labels used to be enormous. Sometimes we had to hold up shipments waiting for new labels ... The Tickometer spares us a lot of headaches, has cut our printing costs and inventory, and given us a really respectable saving on label waste."—From an actual case study.

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Robert J. McCormick is a graduate of Michigan College of Mining and Technology with a B.S. degree in chemical engineering and engineering. He has been associated with the plastics technical service department of The Dow Chemical Company since his graduation. Currently, he is field development engineer in this department.

A close look at polystyrene film

By R. J. McCormick,

Plastics Technical Service,
The Dow Chemical Company,
Midland, Michigan

Here is the first part of a two-part article on polystyrene film. This part reviews the problems of plasticizing the film, looks at its orientation, reviews the problems of stretching, and examines many related aspects of the film. The second part of this article will appear in our next issue and will discuss four methods of orienting the film, the physical properties of oriented polystyrene film, its fabrication and conversion, its cost, and specific applications of this material in the field of packaging.

The possibility of producing a film from polystyrene was first investigated over twenty years ago. It is not at all surprising that people working with polystyrene during its first years of development should have envisioned the resin as a base stock for film. The optical properties and dimensional stability of polystyrene are desirable in a film. Furthermore, polystyrene is a low cost material with a low specific gravity, and, obviously, a film made from the material would be inexpensive providing an efficient method of film production could be devised.

There was, however, one major limitation to be overcome before polystyrene film could become a reality. Polystyrene is a hard, rigid material, seriously lacking in impact strength and toughness. It was apparent these shortcomings of the material would have to be eliminated if a film made from the resin was to be tough and strong enough to fulfill the requirements of a packaging film.

It is a common practice to plasticize resins as a means of increasing elongation and toughness. Polyvinyl chloride is a good example. Many polyvinyl chloride resins are hard and brittle until transformed into tough, flexible substances by the addition of plasticizer.

Unfortunately, polystyrene does not react to plasticizers in the same manner as polyvinyl chloride, and all attempts to produce a plasticized polystyrene film have failed.

"Threshold Concentration"

Although polystyrene is compatible with many plasticizers, no appreciable increase in elongation or toughness is gained until a relatively large percentage of plasticizer is added. (1) In fact, the addition of small amounts of plasticizer can actually reduce the elongation of strain-free film.

Reference to Fig. 1 will show that no effect on elongation is noted with the addition of a plasticizer, butyl carbitol, until a certain concentration is reached. After reaching this concentration, the elongation increases rapidly with the addition of small increments of plasticizer. The plasticizer concentration at which the elongation suddenly begins to increase is referred to as the "threshold concentration".

Polystyrene and most other plastics are characterized by a second order transition temperature. This temperature can be defined as that temperature at which sudden changes in certain thermodynamic properties of the polymer occur. Below this temperature, the polymer is rigid, dimensionally stable, and resistant to cold flow. Above this temperature, it is soft, tough, rubbery, and tacky. The "threshold concentration" is defined as that concentration of plasticizer required to lower the second order transition to room temperature.

Plasticizing Difficult

Thus, it can be seen that "threshold concentration" varies with temperature. It is because of this that difficulty in plasticizing polystyrene is encountered. Plasticized polymer ductile at room temperature becomes hard and rigid with a slight

FIG. I

THE EFFECT OF THE ADDITION OF A PLASTICIZER, BUTYL CARBITOL, UPON THE ELONGATION OF POLYSTYRENE

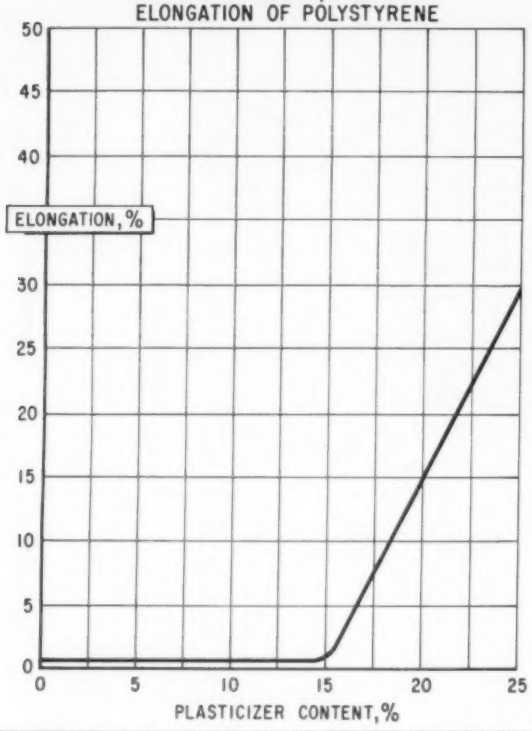
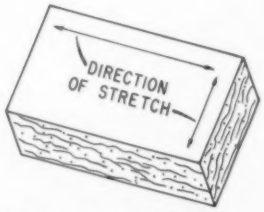


FIG. II

SCHEMATIC ARRANGEMENT OF MOLECULES IN UNORIENTED, UNILATERALLY & BILATERALLY ORIENTED POLYSTYRENE

(a) NO ORIENTATION-MOLECULES PARTIALLY COILED & IN A RANDOM PATTERN. STRENGTH & ELONGATION LOW BUT EQUAL IN ALL DIRECTIONS.

(b) UNILATERAL ORIENTATION-MOLECULES UNCOILED AND PARALLEL TO DIRECTION OF STRETCH. VERY HIGH TENSILE STRENGTH IN MACHINE DIRECTION ONLY.



(c) BILATERAL ORIENTATION MOLECULES UNCOILED AND ALIGNED PARALLEL TO THE SURFACE. TENSILE STRENGTH HIGHER THAN IN (a), LESS THAN IN THE MACHINE DIRECTION (b) BUT EQUAL IN BOTH MACHINE & CROSS DIRECTION.

decrease in temperature and becomes soft and tacky with an increase in temperature of only a few degrees. This phenomenon precludes the feasibility of plasticization as a means of improving the toughness of polystyrene.

During this discussion of the effect of plasticizers upon polystyrene, butyl carbitol was used as an example; however, it should not be inferred that the results obtained are unique with this material. Practically all known plasticizers have been evaluated, and the results obtained approximate those illustrated.

The inability to find an effective plasticizer for polystyrene is understandable. Other materials which are ordinarily plasticized are either partly crystalline or possess high intermolecular forces. Some have a combination of both. Unfortunately, polystyrene lacks both characteristics.

A polystyrene film could be made by dissolving the resin in a solvent and then casting a film from the solution. This procedure would result in the production of a crystal clear film very much deficient in elongation and toughness. The number of practical uses for the film would be very few.

ORIENTATION:

The orientation of polystyrene film greatly improves its mechanical strength and affects other physical properties to a lesser degree. All polystyrene film produced, with the possible exception of a small amount made for electrical insulation, is oriented; therefore, perhaps it would be well to briefly discuss orientation, and the various means by which it can be accomplished.

When molecules of polystyrene, in their natural coiled and random distribution pattern, are partially uncoiled and aligned in a more or less orderly arrangement, the material is then in an oriented state. An analogy between molecules and a group of fine, coil springs has been made by Goggin (2). A group of the springs arranged in a random fashion can be compared to

a group of coiled, unoriented molecules. When the molecules are stretched, they tend to uncoil and align themselves in the direction of stretch just as would the springs.

If polystyrene is extruded from a flat sheet die and then pulled rapidly away from the die under carefully controlled temperature conditions, unilateral orientation results. The tensile strength of the film will be about 50,000 p.s.i., and possibly as much as 100,000 p.s.i. Tensile strengths of this magnitude approach the theoretical limit because they are nearly equal to the intermolecular forces between the molecules themselves.

The elongation of this film in one direction will be between 30 to 50 per cent. However, it will be low in impact strength and will split easily along the direction of stretch.

Results Of Stretching

Let us now consider the results obtained if the film discussed above is stretched an optimum amount in both the transverse and the machine directions. The tensile strength, as well as the elongation, will be equal in both directions and will be about 10,000 p.s.i. and 30 per cent, respectively.

The improvements in elongation and tensile strength are not as great as when stretched in only one direction, but a better balance of properties is obtained. The film is relatively tough and resistant to mechanical strength to be completely satisfactory for the majority of packaging applications.

The molecular arrangements of polystyrene when unoriented, unilaterally oriented, and bilaterally oriented, are schematically illustrated in Fig. 2. These sketches show that with random molecular arrangement, the strength in all directions is equal.

It can also be seen that the increase in strength in the longitudinal and transverse directions, brought about by orientation, is accomplished by a decrease in strength in the direction straight through the thickness of the sheet.

FIG. III
EFFECT OF PERCENT HOT STRETCH UPON ORIENTATION OF POLYSTYRENE MONOFILAMENTS AT VARIOUS TEMPERATURES & AT A CONSTANT STRETCHING RATE

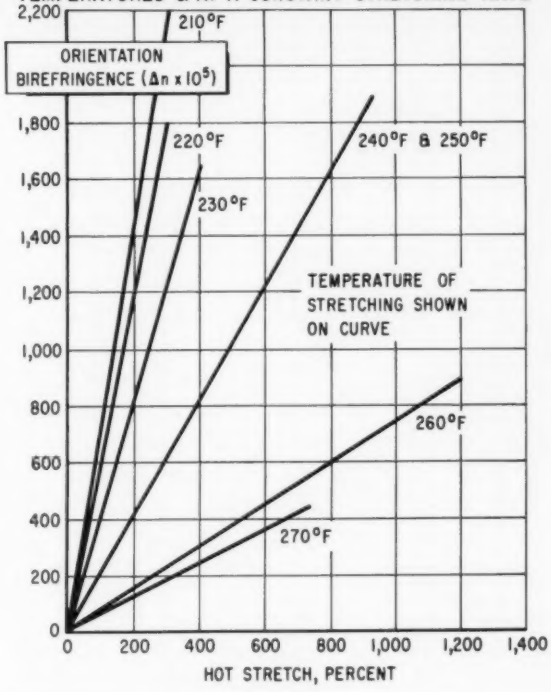


FIG. IV
EFFECT OF RATE & AMOUNT OF STRETCH ON ORIENTATION OF POLYSTYRENE MONOFILAMENT AT CONSTANT TEMPERATURE

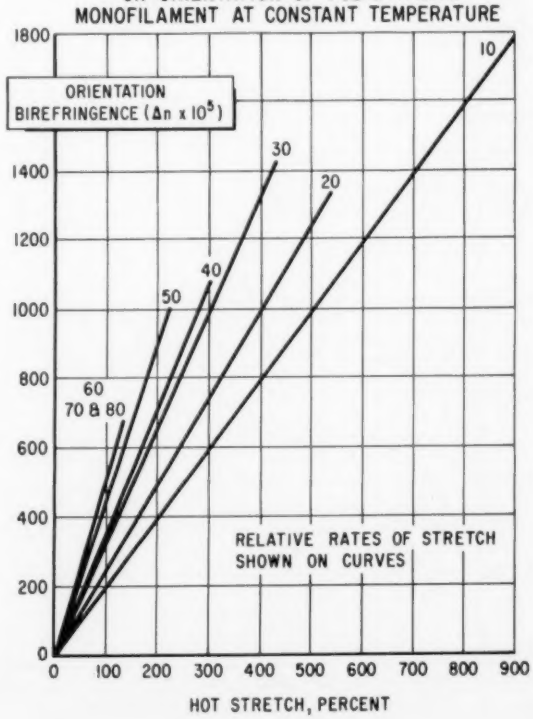


FIG. V

ORIENTATION OF POLYSTYRENE AS A FUNCTION OF QUENCHING RATE & PERCENT HOT STRETCH

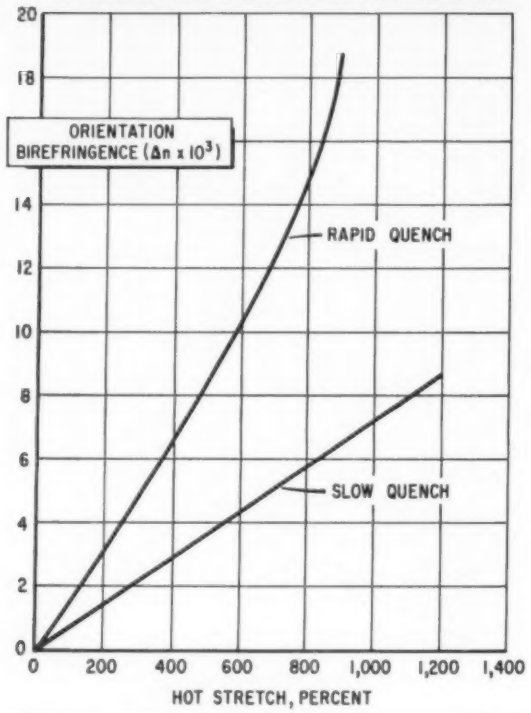
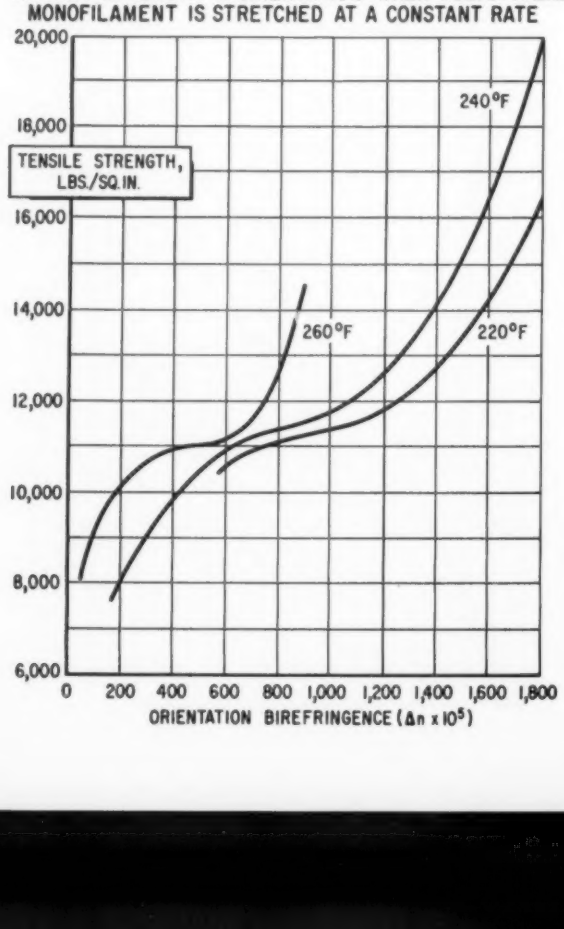


FIG. VI

THE EFFECT OF STRETCHING TEMPERATURE UPON TENSILE STRENGTH & ORIENTATION WHEN POLYSTYRENE MONOFILAMENT IS STRETCHED AT A CONSTANT RATE



This is of no consequence when considering thin films, but would be of definite importance in highly oriented sheets several mils thick, as the sheet would be more or less laminar in form.

Problems Of Variables

The orientation of polystyrene is complicated by many variables, including the temperature of stretching, the amount of hot stretch imparted to the material, the rate at which stretching is accomplished, and the rate of quenching after orientation. The effect of these variables has been the subject of study by a number of investigators (3).

When studying the effect of the many variables upon orientation, it is necessary that some method of measuring orientation be employed. Fortunately, a relatively simple method for accomplishing this has been devised (4) (5) (6). This method of ascertaining the degree of orientation involves the measurement of birefringence, which is defined as the difference of index of refraction along the optical axis to that in a direction perpendicular to it. The optical axis in an oriented film corresponds to the direction of stretch. Reference to this measurement will be made during further discussions of orientation.

For further consideration of orientation, reference should be made to Fig. 3. (3) (7). The series of curves obtained from plotting per cent hot stretch against the birefringence measurement shows the effect of the amount of hot stretch at various stretching temperatures.

Note that much higher orientation is obtained at the lower temperatures and with far less deformation. At the lower temperatures, the tensile strength of the film determines the maximum amount of stretch obtainable, while at the hotter temperatures, the physical limitations of the equipment are the controlling factors.

Stretching Temperatures

It should also be noted that there

is no definite endpoint of stretch other than mechanical strength with polystyrene. This is quite opposite to the performance of crystalline materials, like saran, and presents a genuine problem in the control of commercial orientation processes.

When considering the correct temperature to be used for orienting polystyrene film, it must be remembered that stretching must be accomplished above the second order transition temperature of about 180°F. Furthermore, orienting at too cold a temperature results in breakage rather than stretching.

If the temperature is too high, the molecules do not retain their oriented pattern. The effect of temperature upon production rates must also be considered, as the higher the temperature, the less viscous the polymer and the higher the possible stretching rate. Obviously, stretching temperatures must be selected which are in balance with these various factors.

Rate Of Stretching

For consideration of the importance of the rate of stretching upon orientation, reference is made to Fig. 4 (7), in which the per cent stretch at various rates of stretch is plotted against orientation. For any constant per cent stretch, the orientation increases as the rate of stretch is increased, until a rate is attained which produces very little effect on orientation.

In general, this is true because the material is kept hot for a shorter length of time at the higher stretch rates, and there is less time for disorientation to occur. Faster stretching rates also allow greater output. The factor limiting rate is, of course, the ultimate strength of the material.

For discussion of another method of limiting disorientation after stretching, reference is made to Fig. 5 (3). The effect of the rates of quenching or cooling the material after orientation to a temperature below the transition point is illustrated in a plot of per cent

FIG. VII
THE EFFECT OF PERCENT HOT STRETCH UPON THE TENSILE STRENGTH OF POLYSTYRENE MONOFILAMENT WHEN STRETCHED AT A CONSTANT RATE AT DIFFERENT TEMPERATURES

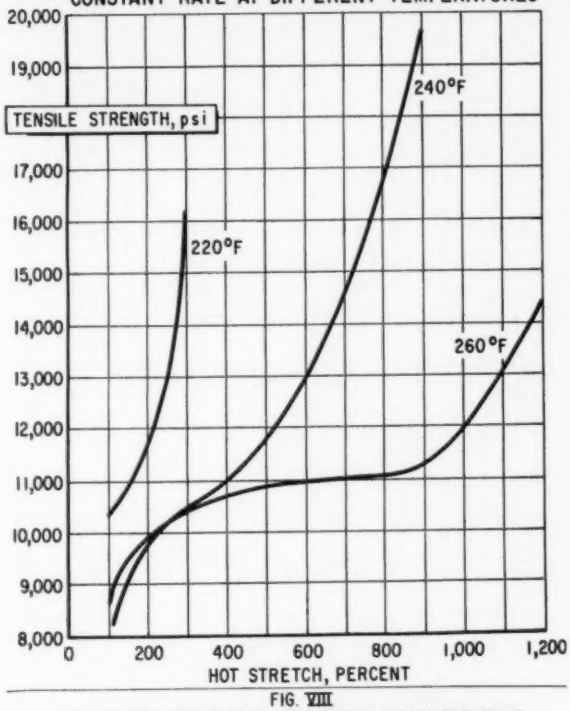


FIG. VIII
THE RELATIONSHIP BETWEEN ORIENTATION & ELONGATION OF POLYSTYRENE MONOFILAMENTS WHEN STRETCHED AT A CONSTANT RATE AT DIFFERENT TEMPERATURES

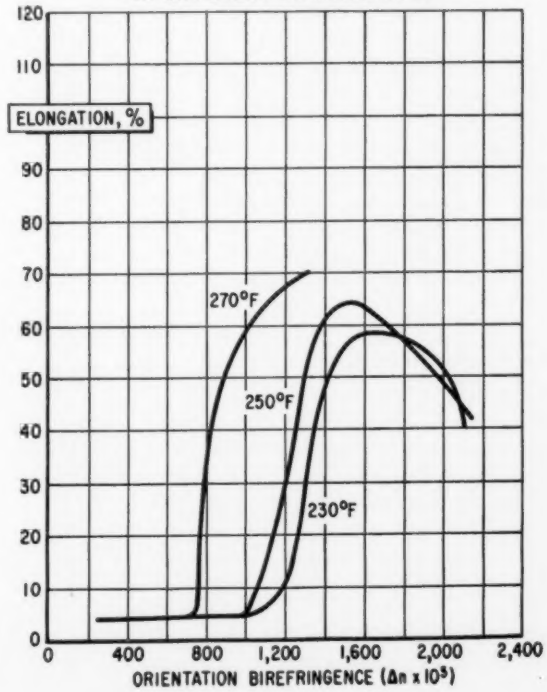
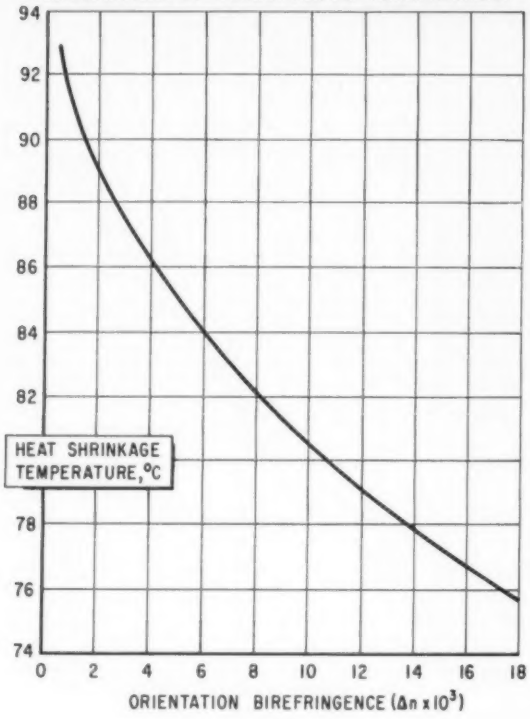


FIG. IX

THE EFFECT OF ORIENTATION UPON THE HEAT DISTORTION TEMPERATURE OF POLYSTYRENE MONOFILAMENT



hot stretch against orientation. The faster the rate of quench, the less disorientation occurs, and as the result, the greater amount of orientation retained.

The factors which affect the orientation of polystyrene also impart their effects upon the physical properties of the material. Although the general effects of orientation upon mechanical strength were previously outlined, Fig. 6 (3) (7), illustrates the relationship of the stretching temperature upon orientation and tensile strength.

Comparing Relationships

The data given in Figs. 3 and 6 is replotted in Fig. 7 to show the relationship between per cent hot stretch, stretching temperature, and tensile strength. It is apparent that tensile strength increases with orientation in all cases until a maximum value is obtained at each temperature.

It can also be seen that at the higher stretching temperature, high tensile strength is obtained with less orientation and that greater per cent stretch is required to attain high tensile strength at high stretching temperatures.

Furthermore, it is shown that orientation, as represented by birefringence measurement alone, cannot be used to predict the physical properties of a sample of oriented polystyrene if fabrication conditions are unknown. The reasons for this are rather complex and will not be presented in this discussion.

Heat Distortion Temperature

The effect of orientation upon elongation differs considerably from those noted for tensile strength. The elongation, Fig. 8, does not increase with orientation until a certain degree of orientation is reached. This degree is dependent upon the stretching temperature.

The elongation then increases with orientation, reaches a maximum, and then declines with further orientation. Elongation is similar to tensile strength in that at high stretching temperatures, higher elongation is obtained with less orientation.

It can be seen from a study of Fig. 8 that it is necessary to carefully control the amount of orientation in order to obtain maximum elongation. Because of this, very careful control of any orientation process for polystyrene film is required, for elongation is probably the most important single property of the material in respect to performance in packaging applications.

The effect of orientation upon the heat distortion temperature of polystyrene, Fig. 9 (3), is of interest, because instead of a desired improvement in this property being obtained, the reverse occurs. This data also supports the theoretical mechanism of orientation which states that at zero orientation no shrinkage should occur and that the heat shrinkage temperatures should be infinite. The asymptotical approach of the curve to the axis as the orientation approaches zero confirms this theory.

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Our next issue will carry the balance of this article, starting with the remainder of "orientation," and picking up where the text on this page ends.

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Leslie W. Smith attended Stevens Institute and Rutgers University. Following his service with Army Ordnance, he joined Koppers Company and was in charge of chemical specialties packaging for seven years. He joined Bristol-Myers in 1954 and for the past three and a half years has been in charge of its packaging department. He is a member of Packaging Institute's production line committee and is a professional member of the Society of Industrial Packaging and Materials Handling Engineers.

J. Leland Smith studied engineering and machine design at Pratt Institute and has been associated with Bristol-Myers for the past 23 years in its production and packaging machinery operations. He is now technical assistant to his department head.

Wheeling and dealing: Let's mechanize our deal type operations

By Leslie W. Smith,
Finishing Department Head,
and J. Leland Smith,
Technical Assistant to Department Head,
Bristol-Myers Company,
Hillside, New Jersey

Do special deals justify mechanization? Some companies assert that mechanized assembly of package components is too costly and inflexible for the fast handling of deal combinations. Others contend that successful deal packaging depends on peak mechanization. Here, the Messrs. Smith state an emphatic case for automatic, rather than manual, assemblying of deal package components. Their review of equipment development and of the training and coordination of personnel to run the equipment with top efficiency constitutes a penetrating summary of what it takes to mechanize deal packaging.

"Wheel and deal"—the cry of the sales department that sends shivers down the spine of the production man! The many advantages of deal type operations are well known to all of us and we concur with our brothers in the sales field as to their value. But after 25 years of standardized production equipment and established operations to work with, the sight of a deal, which could consist of anything man's imagination might conceive, is still a shock that causes many an ulcer.

This article is intended to show the progress we are making in deal operations by:

(1) Careful, analytical study of the production problem.

(2) Accepting the fact that deal operations must be *put on wheels* and assembled automatically rather than manually.

We realize that this is no easy task when we consider the restricted uses of our standard packaging equipment, the time needed by the equipment suppliers to construct special machinery, the fact that the deal may well be a one-shot proposition, and that the cost of the special equipment may be prohibitive.

The following is a case history which we hope will show the use of teamwork and ingenuity that can quiet the cry of a production man from, "Brother, what next?" to "If you can sell it, we can make it".

Problem:

Mum Pick-A-Deal (Fig. 1)

A. Guest Mum standard carton.

B. Medium Mum standard carton.

C. Chipboard riser.

D. Combined to make deal unit.

Production needed:

60,000 cases of two-dozen combinations or 1,440,000 individual dis-

play deals for us to produce.

Start-up time: 6 weeks.

Running time: 1 month.

Production man's comment: "Please pass the Bufferin".

Working It Out

The first step was to call a meeting of the following people:

Department head.

Assistant department head.

Tech. ass't. (in charge of equipment-unit mechanics-machine shop).

Machine shop foreman.

Unit foreman.

Floorlady.

This was to present the facts. It was obvious that this was a deal that could not possibly be economically produced by hand. Therefore, a brainstorming session was held. Ideas came more quickly than one would imagine, and while there is not space to list all the suggestions received at this meeting, a few key ideas were as follows:

Apply glue to bottom cartons.

Carry card on a chain conveyor.

Rotate printing on cartons 90° so tuck ends will be on side of carton. This is to eliminate chances of jars falling out bottom of carton through tuck flaps.

No printing on bottom of carton where glue is to be applied.

Build machine for assembling complete unit to do 120/minute.

Add pitch as well as glue. (The pitch dries quickly and will hold carton on card till glue has a chance to set).

Use standard production lines for Mum Medium and Guest—tie them together at assembly machine.

Estimate cost of deal machine and time element.

Full speed ahead. Since the key to the whole operation was our ability to build an assembly machine in such a short time, all of our efforts concentrated on costing this unit. The time schedule left us no leeway for an engineering job, so years of experience and ingenuity had to suffice. After two days of study, we arrived at a cost of four thousand dollars to complete the unit. Approval was given and we

Fig. 1. Three components of the Mum Pick-A-Deal include (A) Guest Mum standard carton, (B) Medium Mum standard carton, and (C) a chipboard riser. Combined into a unit (D), these components constitute a combination demanding mechanized assembly in order to meet production quotas.

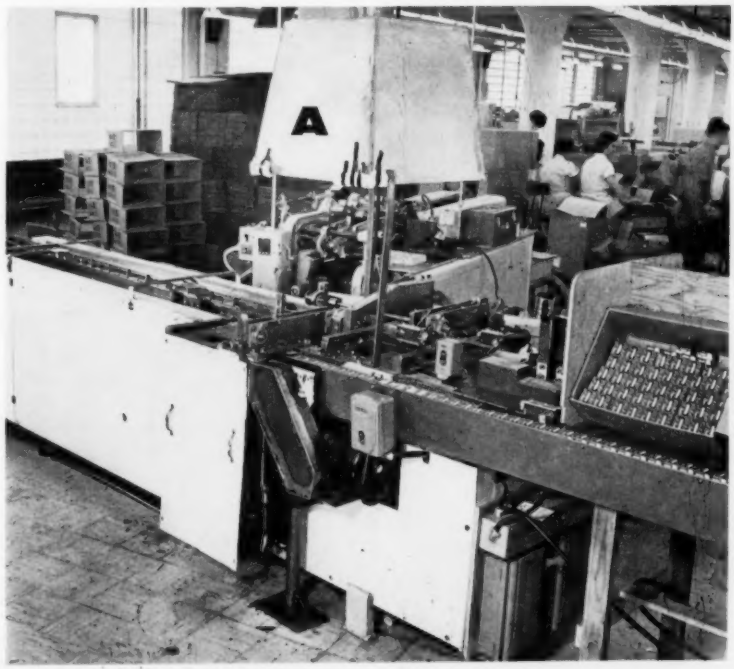

Fig. 2. In three weeks the plant built this deal machine and installed above it a hood (A) to draw off the fumes from hot pitch. A blower was attached to give positive draft. By running the line faster than the deal packaging speed of 120 units a minute, crew members accumulated backlogs of cartons as seen at right. A feed station for these is helpful in keeping up production during the typical 1- and 2-minute stoppages characteristic of most production lines. Safety guards are removed to reveal details.

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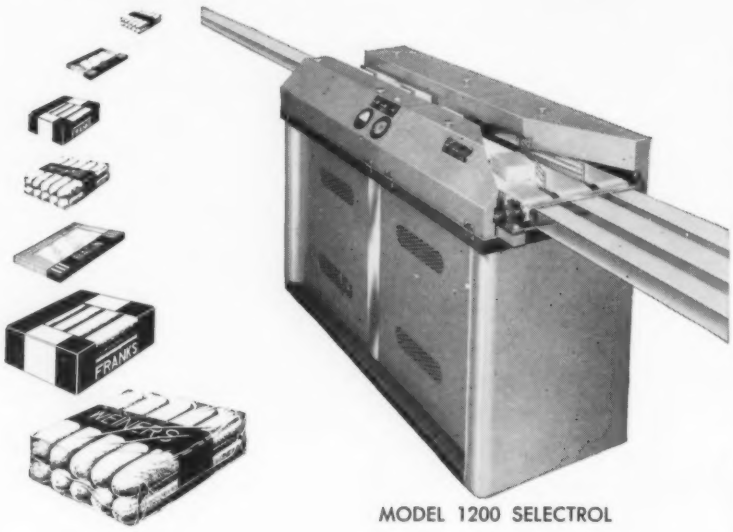

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were off! And full speed ahead!

It had been agreed that since this piece of equipment may be used once, we would buy only standard gears, bearings, chains, sprockets and electrical equipment. As it turned out, 80 per cent of the material bought could have been taken off the machine when the deal was completed and placed back into stock.

This machine was built in just three weeks. Figs. 2, 3, and 4 point out and describe some of its intricate features.

Problem of pitch fumes. Fig. 2 is an over-all view of the deal machine; some safety guards were removed to make a more revealing picture. Item "A" is a hood used to draw off the fumes from hot pitch. A blower was attached to give a positive draught. We installed this item after we were running and the girls complained about the odor of pitch. The case of cartons (to the right in the picture) was used when a maintenance breakdown occurred on our regular filling line.

We built up a backlog of assembled cartons both from short stops on the deal machine and by running the filling line at a rate higher than 120 per minute. This type of feed station is very handy for one- and two-minute down times that can occur on any production line. Production men know this as an accumulating table. The dimensions of the deal machine are: Length, 13 feet; width, 44 inches; height, 39 inches; rated speed, 120 per minute; maximum speed, 140 per minute.

Details of Figs. 3 and 4 are as follows:

How It Operates

A. Belt conveyor to transport Guest Mum cartons from the outtake of automatic cartoner to the elevator of the deal machine.

B. Belt conveyor to transport Medium Mum cartons from the outtake of automatic cartoner to the elevator of the deal machine.

C. Transfer unit for feeding guest size carton. After glue has

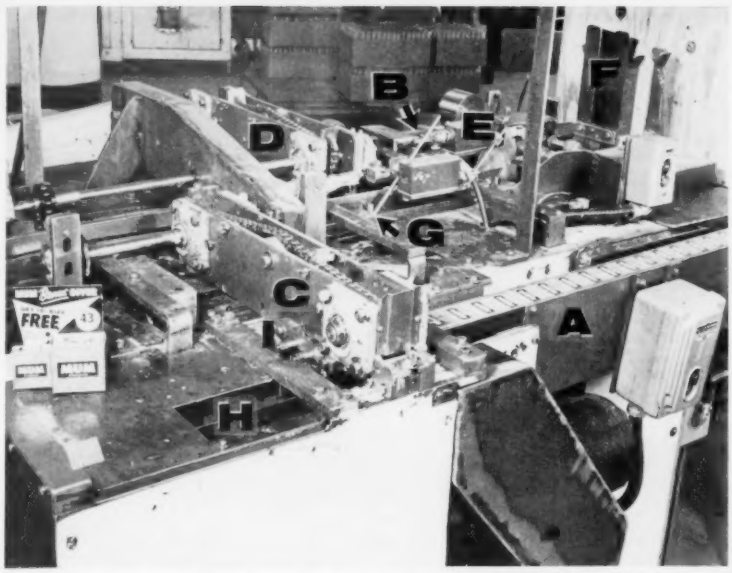

Fig. 3. Belt conveyor (A) carries Guest Mum cartons to the deal machine elevator and belt conveyor (B) takes Medium Mum cartons to the same elevator. Transfer unit (C) feeds guest-size cartons and unit (D) does the same thing except for the medium-size cartons. Limit switches (E) detect empty carrier pockets. Unit (F) is a card hopper and feed mechanism. Carrier plates (G) square up cards and cartons and carry them through machine. Glue pot (H) holds dextrin glue used as the permanent bond. Pitch pot (I) has a hot melt adhesive used as the temporary bond.

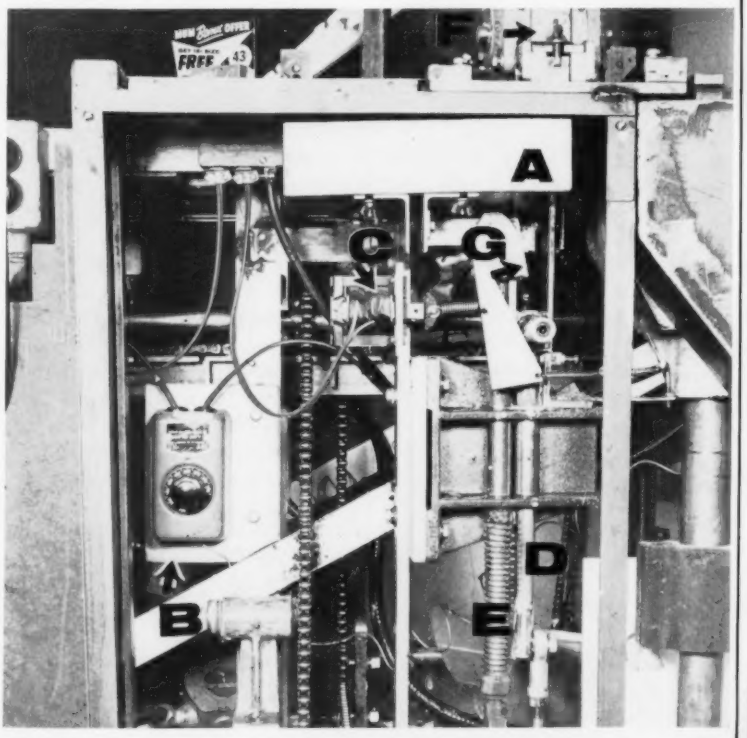

Fig. 4. (A) is side view of glue pot. Thermostatic control (B) regulates pitch pot temperature. Solenoid (C) connects to no card-no carton feed. It is controlled by limit switch (E) of Fig. 2. Mechanism (D) elevates individual cartons into transfer unit (F), after glue has been applied. Upper section of (D) has combination safety device and trip-out for no card-no carton feature (G). Mechanism (E) actuates glue dauber.

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been applied, the carton is driven over a pitch pot and inserted in the carrier chain on top of the card and timed so that it will coincide with the unprinted section of the card.

D. Same function as "C" except this mechanism feeds the medium size carton.

E. Limit switches to detect an empty carrier pocket. These switches are connected with solenoids that operate a no card-no carton mechanism, thus preventing pitch and glue from getting on the carrier chain plates if a card is missing.

F. Card hopper and feed mechanism. Roll type design such as would be used to feed leaflets on a cartoning machine.

G. Angle-shaped carrier plates used to square up card and cartons and carry them through machine.

H. Glue pot to hold supply of dextrine glue which is used as the permanent bond. This is applied to the carton by means of a dauber just prior to being elevated into the transfer unit.

I. Pitch pot contains a hot melt adhesive which is used as the temporary bond and is applied by rollers to the carton as it is driven into the carrier chain by the transfer units.

In Fig. 4 we find these details:

A. Side view of glue pot.

B. Thermostatic control for regulating the temperature of the pitch pot.

C. Solenoid connected to no card-no carton feed, controlled by limit switch "E" of Fig. 2.

D. Mechanism for elevating individual cartons into the transfer unit "F" after glue has been applied. Upper section of "D" contains combination safety device and trip out for no card-no carton feature "G".

E. Mechanism to actuate glue dauber. This is cam-operated and closely timed with elevator.

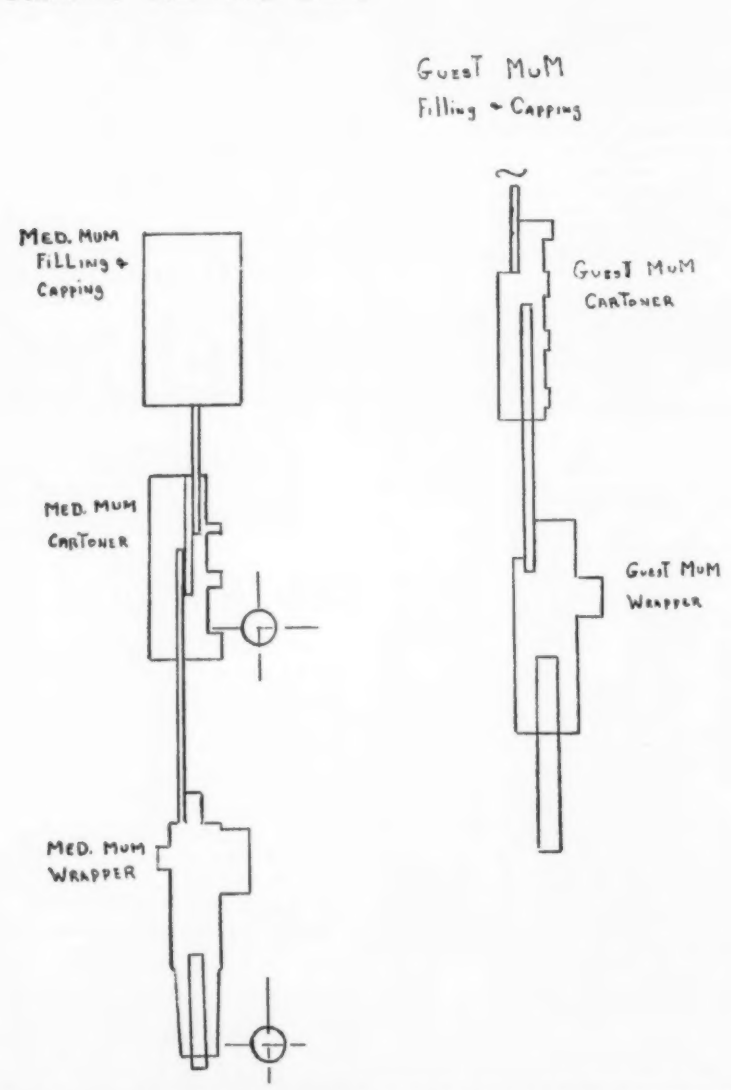

Fig. 5. These are the standard production lines for the Medium Mum and the Guest Mum normal packaging operations. Note the conveyor distances between machines.

All Ready To Run

With the completion of the deal machine, we were ready for installation. Fig. 5 shows our normal production line layout for Mum Medium and Mum Guest. Fig. 6 shows how we removed the Medium wrapper and installed the deal machine in its place. We also put a conveyor from Guest Mum cartoner outtake to deal machine. We were now ready to run—which we did and met our deadline, as well.

Keep equipment intact. An interesting sidelight to this operation is that we did not disassemble the deal machine when the deal was completed. It was placed in storage and now we find our sales brothers are asking for another Mum deal. Although it is different from last year's, we find that for $1,000 in redesign on our deal assembler, we can use this piece of equipment to run the new Mum deal.

We all know of the crying need for deal type equipment and the enormity of problems in design, but we believe we have taken a step in the right direction in developing a machine for display card type deals.

We have found the most important single factor in deal type operations to be the human element.

(Turn Page)

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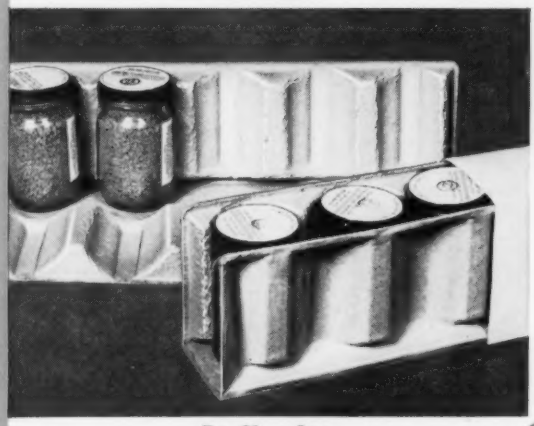

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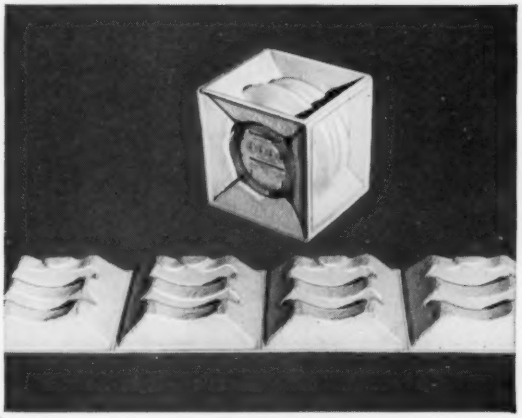

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Importance Of People

The human element vital in all our production takes on added importance in deal operations. This is principally due to the unusual shape and sizes that are inherent in deal operations. An item run on standardized equipment that has been developed over the years is perfected toward the goal of as little human attention as possible, whereas a deal assembly unit just does not have the years of "little changes" to protect it. You can build only so much into a piece of equipment in a period of say, six weeks. Therefore, the human element is, of necessity, more important.

Rotate on jobs. Training of our workers in handling deal packaging emanates directly from our standard method of training. We use a rotation and marking system for our operators which takes about three years to complete. A girl is trained on the cartoners, bundlers, fillers, cappers, etc., and throughout this period receiving credits for proficiency on each of these machines. This rotation and experience on the different types of equipment gives an operator a mechanical sense which helps adjust herself to the unusual automatic deal machines.

Our line supervisors, foremen, and floorlady receive company-run courses on work simplification and these are held on company time. These courses are repeated every two or three years for new supervisors and to serve as refreshers for the older ones.

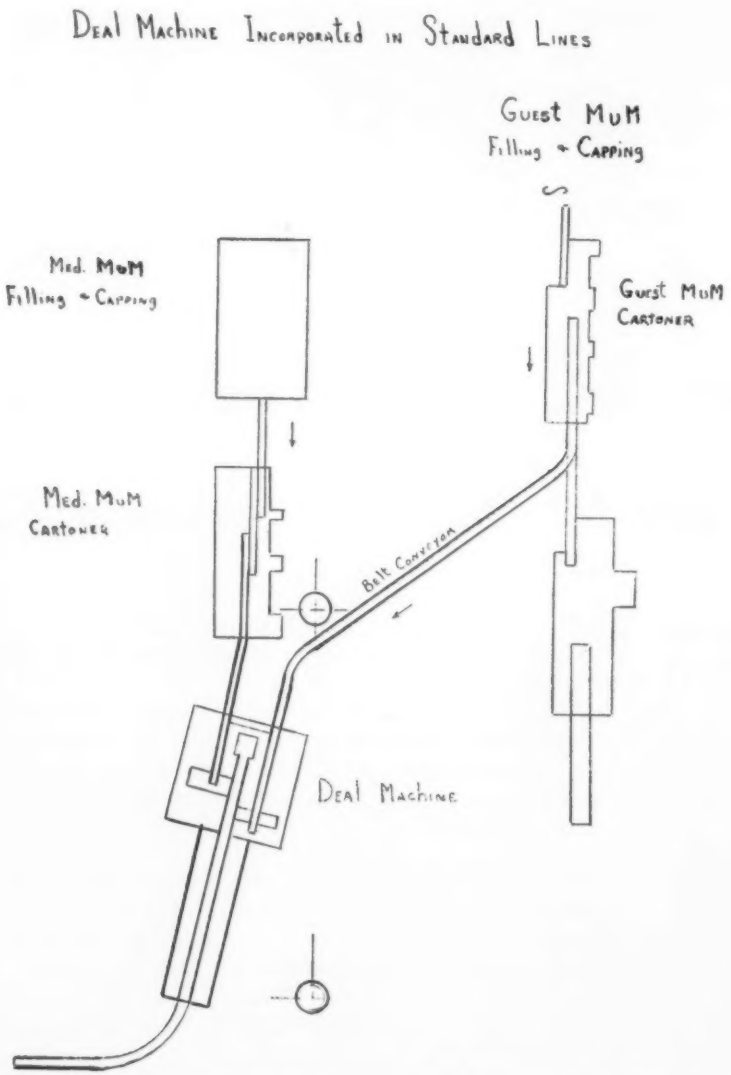

Fig. 6. The Medium Mum wrapper has been removed and the deal machine installed in its place. There also is a conveyor from the Guest Mum cartoner outtake to the deal machine. Note the arrows indicating direction of flow.

Developing Mechanics

Our unit mechanics spend from six months to a year working in the machine shop. They are all qualified to do simple lathe and milling machine type jobs and when a deal machine is being built, the unit man will spend the last week of construction in the machine shop working on the unit. He is present at the test running, along with the floorlady, unit supervisors, and usually a package line operator.

Let them run the lines. For the last four years, the machinists and machine shop foreman have been put in charge of the production unit at least three weeks of the year. Also they work with the unit mechanic on installation, replacement, and repair of production lines. We have felt it a mistake to have a strict line of separation between the unit mechanic and the machinists. Our machinists would better be classified as production machinists, because, in addition to his ability as a Class A machinist, he has the technical knowledge of high-speed production equipment such as cartoners, fillers, labelers, etc. We are fortunate in having our maintenance section in the middle of our production area. This lends

itself to free interchanging of ideas between the unit mechanic and the machinist—giving us a definite, teamlike organization.

We have a three-year apprenticeship system in which a man can become a unit mechanic or a machinist. This course includes going to a recognized trade school at night, and spending so many hundreds of hours in the machine shop, as well as, working on production units.

How Cooperation Works

It may seem like "old hat" to say high morale is the key to teamwork and cooperation but we of Bristol-Myers live by the policy that "people are our most important product".

The freedom of expression shown in our meeting was by no means developed over night. Our people are, we believe, tops in their fields and have many years of experience to back up their decisions. Our top management people realize that in a meeting such as we held on this deal we had a total of about 75 years of experience in the production field. There is a wealth of technical know-how in those years; with proper direction and encouragement the harvest can be rich. An example of how we practice what we advocate is the "six of one, half dozen of another" type of problem. Thus, an investigated problem comes up with solutions which can be attained by two methods, both being equal in economics, etc.

"Now it's your turn." We usually say: "The last one of these decisions we had, we did it my way. Now it's your turn" or "Well, who won the last time?" There are many decisions you can use to show a foreman that you are not only interested in his getting a job done, but are willing to make him part of the team in fact rather than in theory.

A man may approach you with a problem. Even if you think you know the answer, ask him how he would solve it, and then see if your answer can't be blended in with his solution. We have found that in most cases experienced personnel have the answers. The only real help they need is the direction.

Drawing On Experience

In our meeting on the deal our floorlady asked, 'Will the glue stick?" This seemed a simple question, but when we asked why she asked it, she stated that the deal cards have to be packed in a case immediately after the adhesive is applied. She had encountered problems on our wrapping machine when we bundled a dozen cartons together. In packing these bundles in a case, they would open because the glue did not have time to set.

The machine shop foreman then said, "We will test it and if the glue does not have time to set, we can use pitch and glue". We point out this case only to show that here was experience pushing someone to ask a question. The wording of the question wasn't nearly as important as the experience that provoked it. We emphasize that when experience is talking, listen, and give it proper direction and encouragement.

Problems of capital. The accent on producing a quality product at a high production rate is a basic matter of economics. By producing this deal in one month, we feel we do not have to extend our inventories of the regular products that are in the deal. The production lines needed for the deal cannot produce our regular product while running the deal; therefore, we must build inventories. No one need explain that high inventories mean dollars tied up when you could use those dollars somewhere else. Manpower enters this picture as well. It will take more people to produce a deal than a regular stock item; therefore, the more quickly you produce the deal the less you disrupt your labor force.

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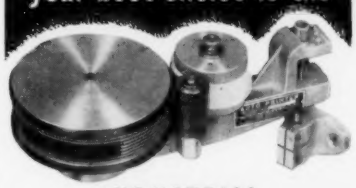

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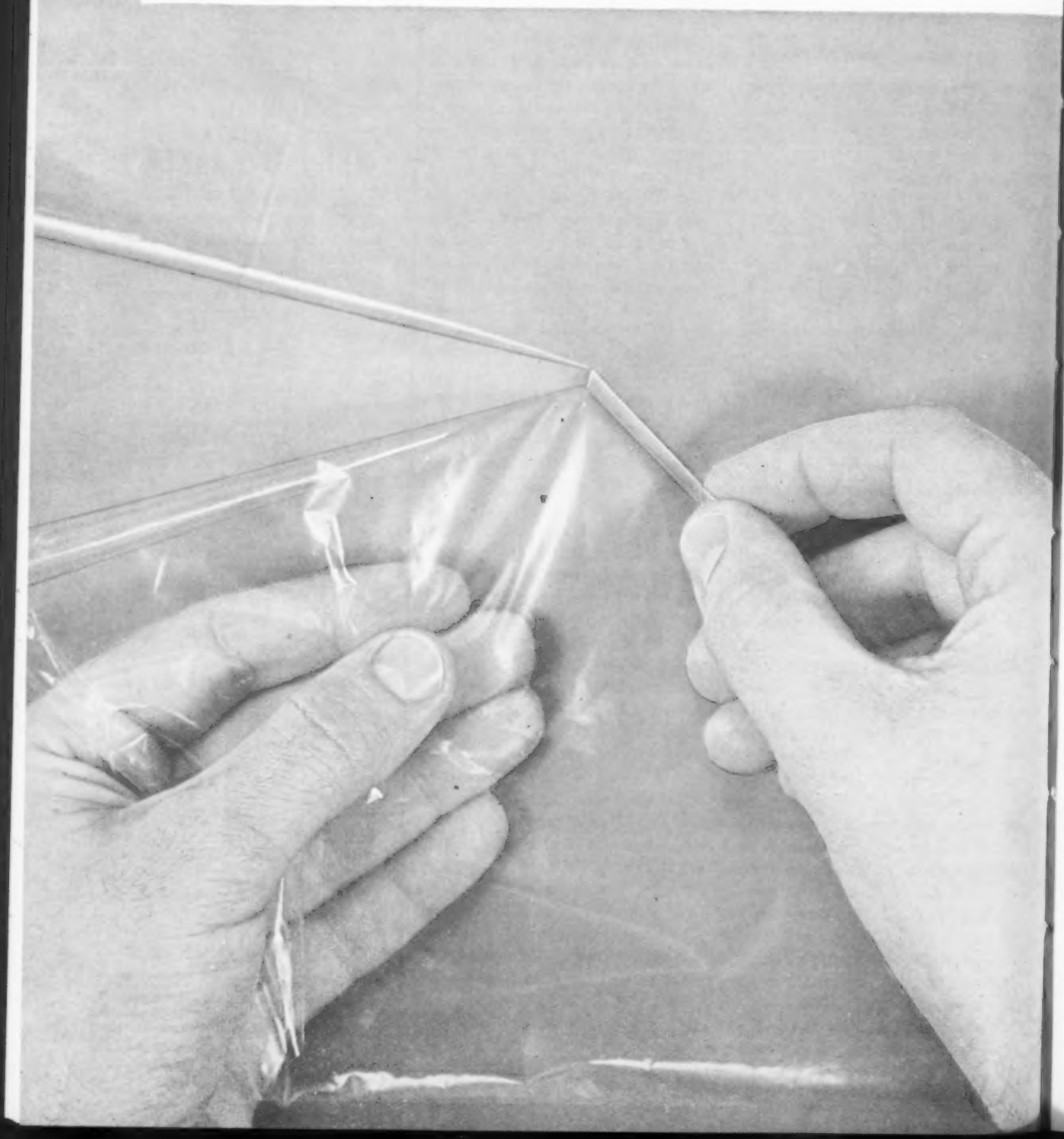

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Reducing the number of packaging items for automatic washers

Looking for a simplified method of packaging its automatic washing machines and at the same time save on materials and increase production line efficiency, The Maytag Company developed a unique device to hold the washing mechanism rigid during shipment. Termed a "tub block assembly," this device permits fastening the cabinet backs in place permanently, which was not feasible with the old method of packing. It reduces the number of packaging items required for the inner packing from 35 to 13, and permits a greatly simplified packing procedure as compared to the old. This much-improved, but simple packing results in a total cost saving of over $45,000 annually.

By developing a simple device to hold a semi-rigid part in place in automatic washing machines during shipment, The Maytag Company, Newton, Iowa, fulfilled two of its packaging objectives. These were: (1) How to reduce interior packaging material usage, and (2) how to increase overall packaging line efficiency.

Adoption of a simple "tub block assembly" which holds the tub in the machine rigid during transit eliminated many packaging components from the finished package. These consisted of various sized pieces of wood, a built-up corrugated pad, steel strapping, and various sized nails, nuts, bolts, etc. Further, this assembly reduced operations on the packaging lines, allowed the company to assemble its machines completely, and simplified setting up the machine by dealers for demonstration purposes. Use of this item resulted in a total cost-saving of over $45,000 annually.

An Intricate Mechanism

The fundamental design of the washing mechanism in the Maytag automatic washing machines is the basis for proper packaging which will hold semi-rigid parts in place during transit. The design is such that the round, non-rotating outer tub rests on a single upright drive-shaft housing. The only point at which the entire tub assembly is anchored to the machine frame is at the lower end of this housing —it is secured to the base frame of the machine. The entire tub assembly is held in a true vertical position by three strong, short centering springs mounted equidistantly around the base of the drive-shaft housing. (See Fig. 1).

Function of ring. A round, perforated tub is mounted inside and is concentric to the outer one (see Fig. 2); this tub spins at a high speed during the spinning cycle. The top edge of this inner tub is weighted with a heavy balance ring. In operation, this ring helps to prevent centrifugal force from causing the entire tub assembly to sway back and forth slightly. The centering springs serve to counteract this swaying motion when the machine is running through its cycle.

During shipment, this freedom of sway of the tub assembly must be prevented by effective packaging. Otherwise, handling and shipping, and especially severe humping, will damage the entire mechanism so that it will not operate properly.

Old Packaging Method

Previously many packaging components were used to hold the tub assembly rigid in transit from the production line to the retailer. The items which the company's packaging technicians eliminated in favor of the method using the tub block assembly consisted of the 35 pieces below:

- 2 1⁹⁄₁₆x4x35¾ in. lumber
- 2 ⅞x1x4 in. lumber
- 2 1⅝x1⅞x4 in. lumber
- 1 13/16x3x4 in. lumber
- 6 No. 6d coated nails
- 4 No. 7d coated nails
- 4 No. 8d coated nails
- 1 3¾x8½x23¼ in. built-up pad
- 1 23¼x35-3/16 in. scored corrugated board
- 1 0.020x⅝x36 in. steel strap
- 1 0.020x⅝x96 in. steel strap
- 2 No. 51 open seals for steel strap
- 2 lengths pressure-sensitive plastic tape
- 2 No. 20x¼ in. square nuts
- 2 No. 20x¼ in. stove bolts
- 2 ¼ in. standard washers

All of these parts were placed into the back of the machine cabinet and around the tub assembly. The packing was accomplished at various stations along the assembly lines just prior to placing the entire machine into its corrugated container. A great deal of time was consumed to package one machine in this fashion (see Fig. 3). The prolonged procedure involved the following steps:

1. Two small wooden blocks were nailed to the wooden shipping base on which the machine was mounted. They were positioned adjacent to the back edge of the cabinet base, one at either side.

2. The left and right vertical wood supports (looking at the machine from the rear) were partially assembled by bolting the upper

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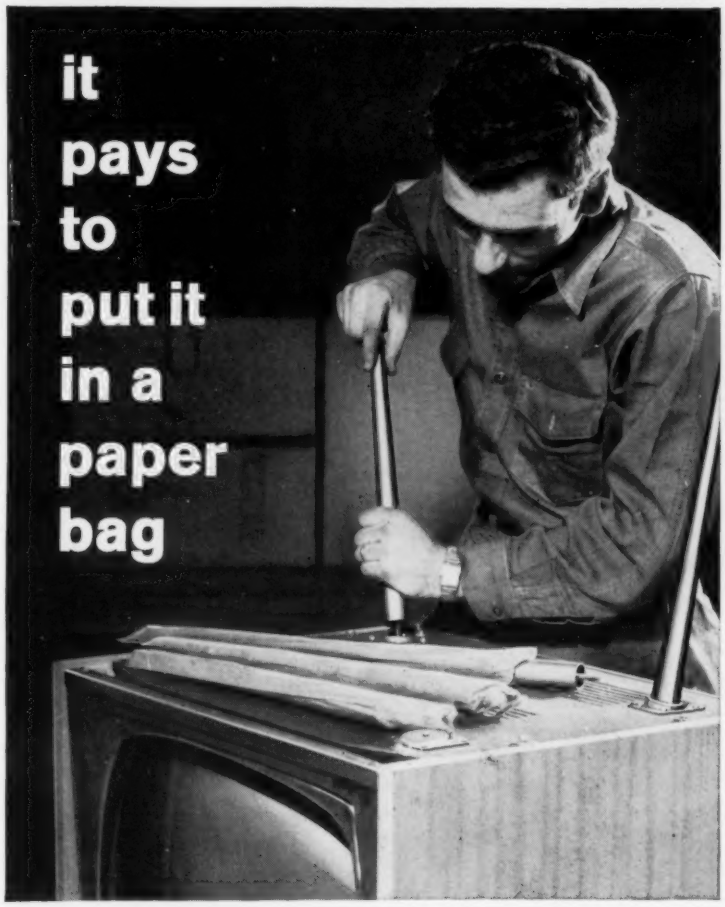

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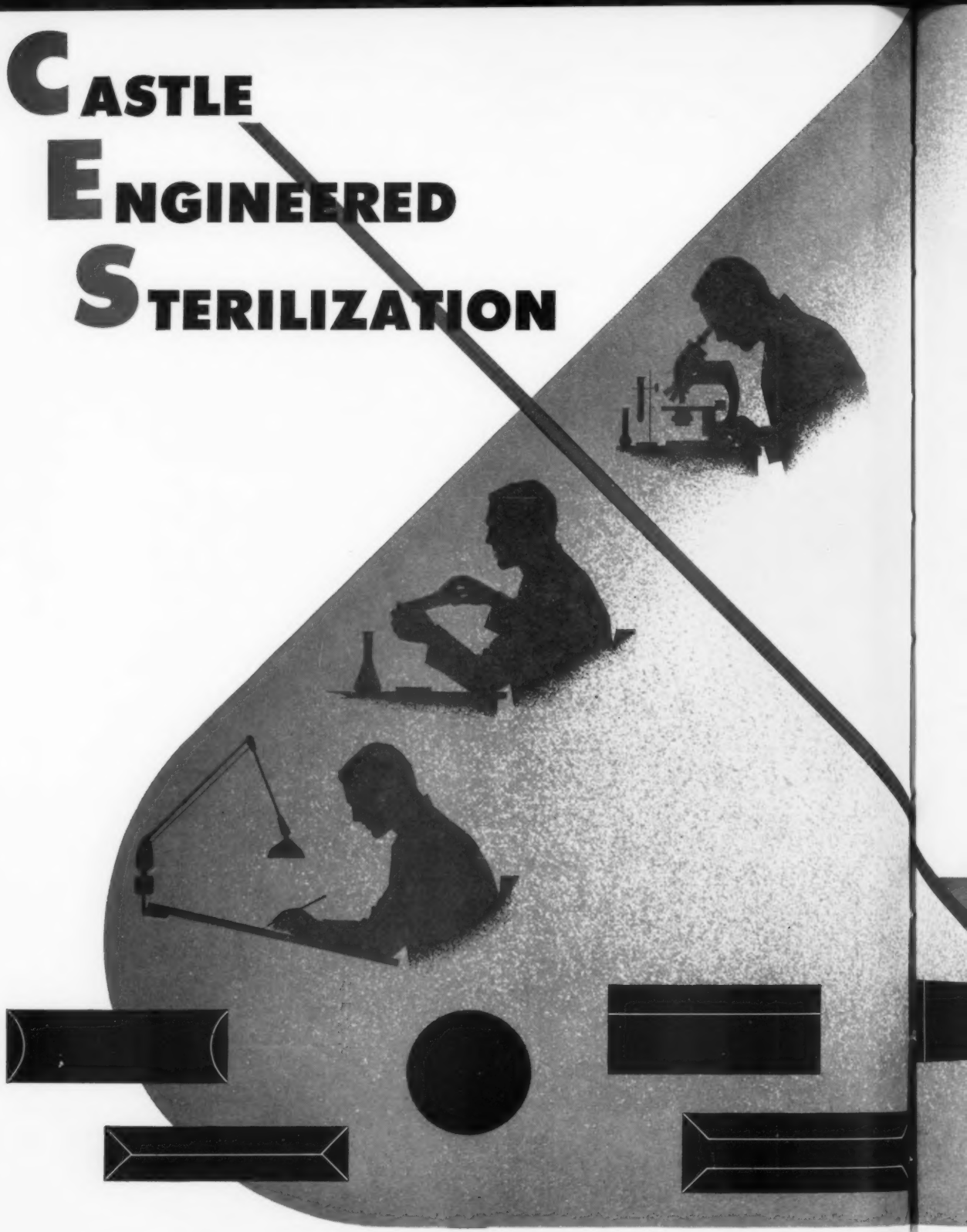

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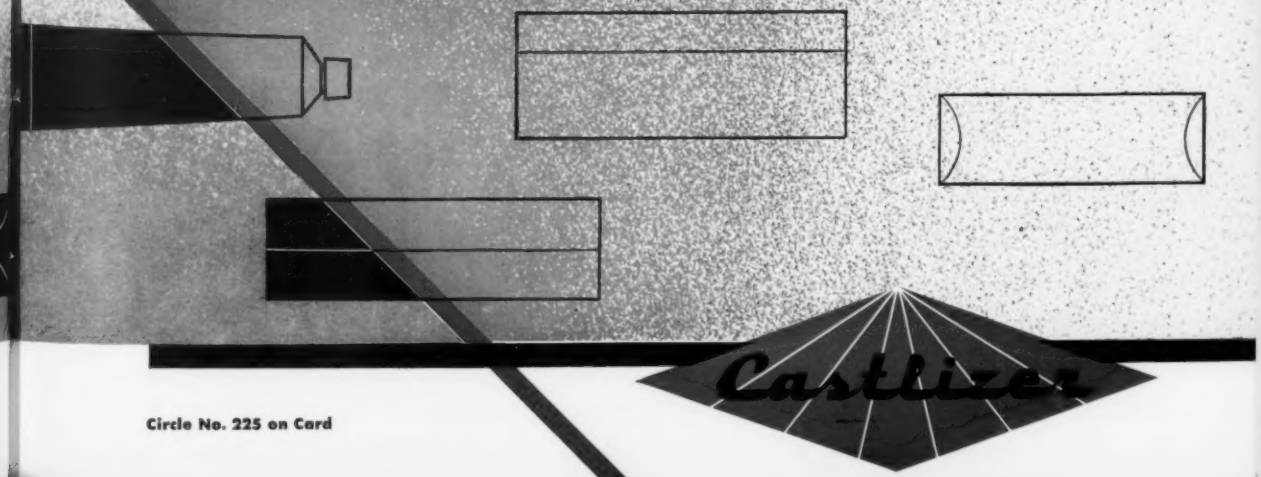

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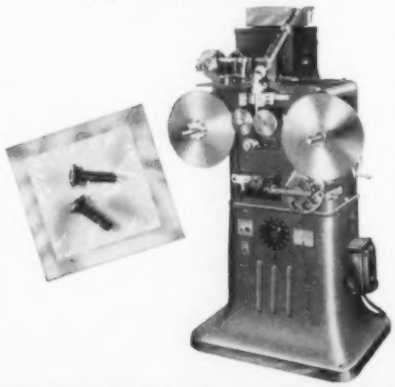

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ends to the top back edge of the cabinet, one at either side.

3. The built-up pad, one surface of which was formed to fit the curvature of the outer tub, was put into place next to the back side of the tub.

4. The lower ends of the upright supports were then nailed to the blocks mounted previously to the wooden shipping case.

5. The electric motor was fastened firmly to the left upright support by means of steel strapping.

6. With the built-up pad positioned so as to be wedged between the tub and the upright supports, the tub was secured to the supports with steel strapping.

7. A corrugated board, to cover the entire back opening, was placed over the uprights.

8. The metal cabinet back was then positioned over the corrugated board and taped in place.

9. At this stage the entire machine, as packed above, was placed into its corrugated shipping container.

Note, in step No. 8 above, the back panels were not fastened to the cabinets. The machines were shipped to the dealer in this manner, and it was necessary for the dealer to remove all inner packing before the machine could be demonstrated or be delivered to the customer.

The Tub Block Assembly

In an effort to find some means of packing which would allow complete assembly of its machines and which would reduce costs of packaging materials, as well as save time, the company's packaging personnel concentrated on the problem. Since the tub assembly was anchored only at its base, they decided it was only necessary to anchor the top of it to make it completely rigid. They started by studying the relationship of the top of the tub to the cabinet top.

Maintaining alignment. The top opening of the outer tub and the opening in the top of the cabinet (see Fig. 2) are each 13-11/16 in. (±1/32 in.) in diameter. When the

machine is completely assembled, the tub is positioned under the cabinet top so that the two openings are lined up perfectly. The edges of the two openings are flush to one another when the machine is not running and when it is in its normal upright position. The top edge of the tub stands approximately 1/16 in. to 1/8 in. below the opening in the cabinet top. Realizing that some method was needed to hold these two edges flush, which in turn would hold

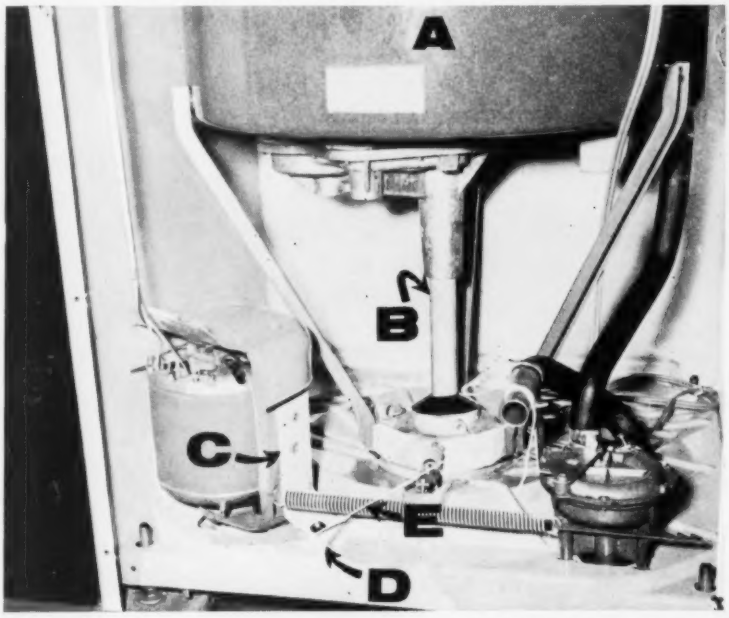

Fig. 1. Interior of automatic washing machine. Entire tub assembly (A) rests on single upright drive-shaft housing (B). Although strong centering springs at base of housing tend to prevent tub assembly from swaying slightly, effective packaging must completely prevent all freedom of sway during shipment. To support motor, the motor anchor bracket (C) is secured to motor. Plywood spacer block (D) is positioned under anchor bracket, and both are fastened to base frame of machine. String, (E) one end of which is fastened to spacer block, is for simple removal of block when machine is readied for operation.

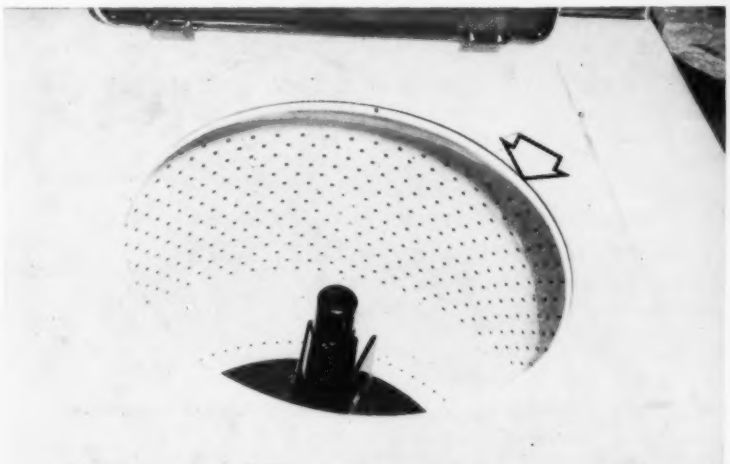

Fig. 2. Top view of automatic washing machine. Note perforated inner tub which spins at high speed during spinning cycle. Opening in outer tub and that in cabinet top are of same diameter, and are flush to one another (arrow) when machine is not running and when resting in its normal upright position.

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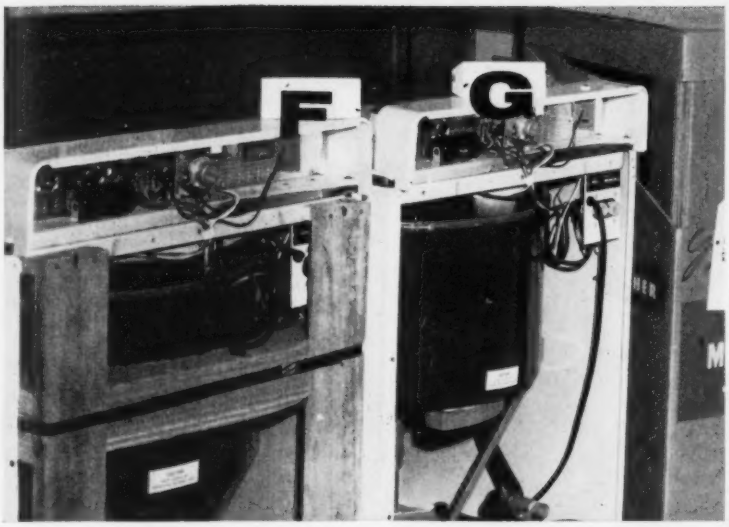

Fig. 3. Rear view of machines showing (F) old and (G) new method of interior packing. Note that old method utilized many packaging components such as various sizes of wood, nails, built-up pads, steel strapping, etc., not necessary with the new.

the tub assembly rigid, the packaging engineers developed a sleeve device which they have termed "tub block assembly." (See Fig. 4).

This device consists of a solid fibreboard ring glue-mounted on one edge to a square piece of corrugated board. The fibreboard of which the ring is made is 25/64 in. (+0.0 in., −1/16 in.) thick. The ring is 2-7/8 in. (±1/8 in.) wide with an outside diameter of 13-21/32 in. (+0.0 in., −1/8 in.)—very slightly less than the diameter of the tub and top cabinet openings. The corrugated board to which the ring is glued is 14 in. (±1/16 in.) square—slightly larger than the outside diameter of the ring.

Jig Allows Fast Assembly

The company purchases the rings and corrugated squares from different suppliers and joins them together to form the finished tub block assembly. This is done as a continuous operation by an operator on the appliance assembly line. At one station along the line, a platform was built to hold six jigs (see Fig. 4) into which the corrugated squares and rings are placed for gluing.

Each jig consists of two wooden blocks positioned on the platform at right angles to one another and spaced so that each is in line with the mid-point of one of two adjacent edges of the corrugated square. The lower portion of these blocks is notched back approximately 3/16 in. to enable quick centering of the ring on the square during the gluing operation.

First, the square is placed into the jig with its edges touching the notched portions of the blocks. Glue is applied to one edge of the ring by dipping. The ring is then put into place on the square with its outer surface in contact with the unnotched portions of the two jig blocks, thus centering it on the square. The entire assembly is held under compression for three to four minutes. A reserve bank of approximately 100 completed assemblies is maintained at all times as a precautionary measure.

Getting snug fit. In use, the tub block assembly is quickly dropped into place so that the fibreboard ring portion fits through the cabinet top opening and into the tub opening. (See Fig. 5). Due to the company's insistence on close dimension tolerances of its machines and its packaging materials, a snug fit is obtained between the ring and the openings. The square por-

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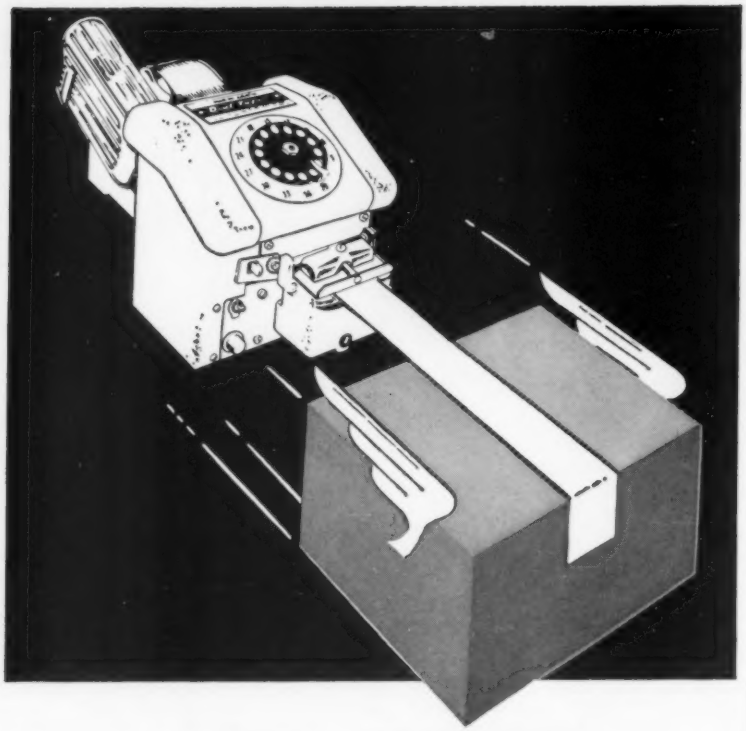

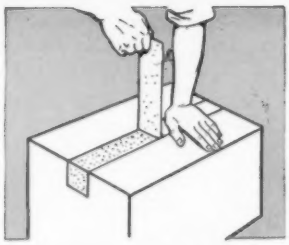

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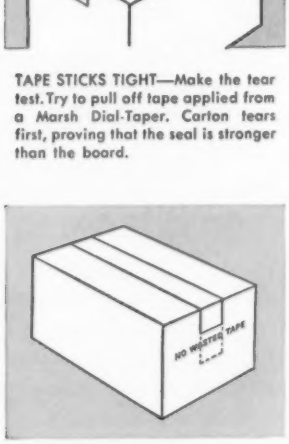

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tion of the tub block assembly supports the ring, preventing it from falling through the openings, and fits neatly into the square depression surrounding the opening in the cabinet top. With the device in place, the cabinet lid is closed down over it and taped shut. This arrangement holds the two openings in the same place and prevents any swaying of the washer tub assembly.

Supporting The Motor

Although the tub block assembly reduced packaging material costs, increased production efficiency, and allowed the company to assemble its machines completely, it still had the problem of packing the electric motor so it would be rigid during shipment. Previously the inner packing provided for this.

Supporting the motor involved two problems: (1) The anchorage had to be independent, of course, of the packing holding the tub assembly rigid, and (2) it had to be removable without taking off the cabinet back. By a simple metal bracket, a wooden spacer block, bolts, and a piece of string, a means of packing was devised. (See Fig. 1).

Bracket stays in place. The anchor bracket is a piece of iron with one end bent at right angles to the other. The spacer block is a small piece of 1/2 in. plywood to which is attached a piece of string about 28 in. in length. Two screws are used to assemble the longer leg of the bracket to the motor base permanently—this bracket never has to be removed as it does not interfere with the operation of the motor.

The spacer block is positioned under the anchor bracket and both are fastened to the base frame of the machine with two bolts. After the cabinet back is mounted in place, the string is led through an opening in the back and taped to the outside. All that is necessary to remove the block is to remove the two bolts holding the bracket and block (accessible from underneath the machine) and pull the string. The block comes out and

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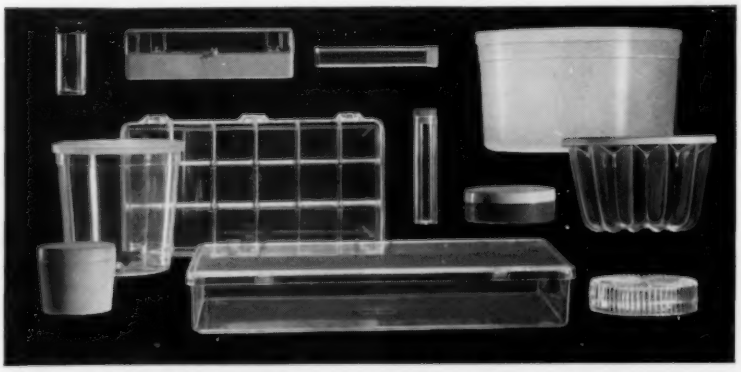

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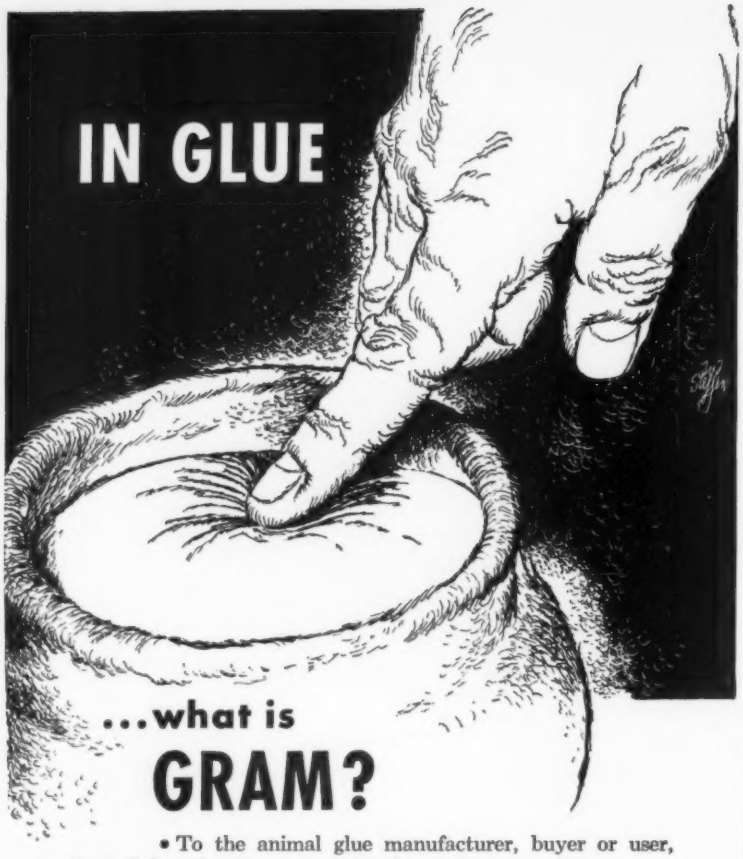

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Comparison Of Methods

With the new method of packaging, the following 13 items are used. They replace the 35 previously listed.

1 solid fibreboard ring
1 square corrugated board
1 iron motor anchor bracket, 12-gauge, 2x7⅛ in., short leg 2⅛ in., long leg 5 in.
1 spacer block, ½x1½x2 in. plywood
1 length of string, 28 in.
1 length of pressure-sensitive tape, ½x2 in.
2 No. 10x15/32 in. self-tapping screws
2 No. 20x¼ in. speedgrip nuts.
2 No. 20x¼x1 in. machine screws
sodium silicate adhesive.

Although several of these items are repetitions of some of the ones eliminated, the fact remains that 13 items replace 35 formerly used.

A simple procedure. To compare the new method with the old, the following simplified packaging line procedure is now in use:

1. The motor anchor bracket and spacer block (with string already attached) are assembled to the base frame of the washing machine. The bracket is fastened to the motor base.

2. The cabinet back is fastened into place and the string from the spacer block is led out the opening in the back and taped.

3. The tub block assembly (put together as part of the appliance assembly line operation) is placed into the top opening and the cabinet lid is closed and taped.

4. The entire machine as packed above is placed into its corrugated shipping container.

By comparing the lists of packaging items and the steps involved in the two methods of packing, one can easily determine which is the simpler of the two. This is also reflected quite noticeably in the annual total cost saving of over $45,000.

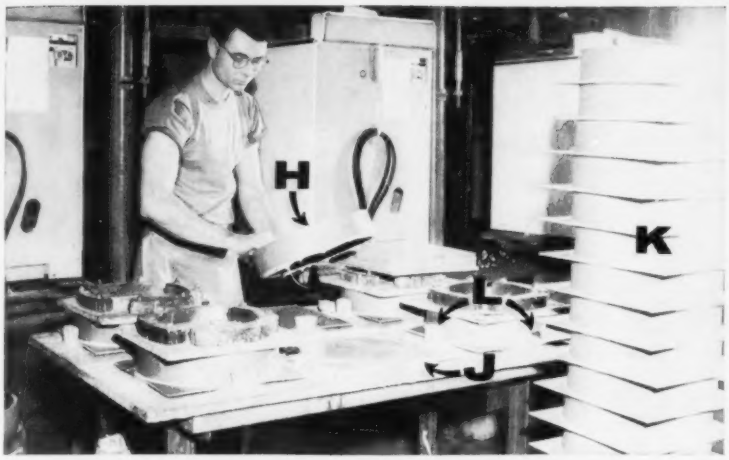

Fig. 4. Assembly line stations where jigs are used to join two component parts of "tub block assembly". Upper photo: Fibre ring (H) is glue-mounted to corrugated square (J) to form finished assemblies (K). Each jig consists of two blocks (L) positioned and notched properly to enable quick centering of the ring on corrugated square during gluing operation. Glue is applied to ring by dipping. Lower photo: Ring is then placed on square, and complete assembly is held under compression (M) for three to four minutes.

Fig. 5. "Tub block assembly" (K) is quickly dropped into place. Fibreboard ring portion fits through cabinet top opening and into tub opening (N). A snug fit is obtained which holds the two openings in same plane. Square portion supports ring, and fits neatly into square depression (O) surrounding opening in cabinet top.

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Charles A. Lewis has been associated with the United States government 22 years. Prior to entering federal service, he was with the Modern Valve Bag Company (serving the Hawkeye Cement Company) and the Penn-Dixie Cement Company. While in industry and employed by the government, he attended Maryland University. In the course of his governmental service, he was with the War Production Board during World War II. Subsequently, he was chief of the containers branch, Civilian Production Administration. From there he moved to the Department of Commerce to head up its container functions.

Packaging's part in the National Defense Executive Reserve

By Charles A. Lewis,
Director, Containers & Packaging Division,
Business and Defense Services Administration,
U. S. Department of Commerce,
Washington, D. C.

Here is an account of something we hope we never need: The organization of the government and of the containers and packaging industry to meet the needs of national emergency, including a war. Mr. Lewis, a career government executive, tells how the government is stockpiling executives for use in a national emergency. All those concerned with buying and using packages and packaging materials should be familiar with this program.

What is the National Defense Executive Reserve? What does it mean to you, to your company, to your industry? If you are asked to participate in this expanding program, will you appreciate its importance? Will you have the facts concerning the National Defense Executive Reserve on which you can base an intelligent decision?

The Executive Reserve is a very important part of our national defense program. Since World War II, our government has been busy stockpiling material, machine tools, equipment and, in some instances, plants against another possible national emergency such as an attack upon the United States.

In addition, while the strengthening and streamlining of our armed forces has been in progress, considerable planning from a mobilization and industrial defense readiness point of view has been done. A couple of years ago someone in Washington awoke to the fact that although you can stockpile material, tools, and equipment, and do all kinds of defense mobilization and readiness planning, these are of little value without a "catalyst" to bring the parts together and to make them work.

This "catalyst" is the expert, technician, or executive who has the scientific, technical, or administrative know-how to bring the parts together. He can start the wheels turning at the right time so that our industrial machine quickly makes the difficult transition from a peacetime to a wartime economy.

Stockpiling Of Executives

The National Defense Executive Reserve is literally a stockpile of such vitally important executive, technical, scientific, and administrative know-how which would be needed for this country to face another war. The cadre of highly qualified men from all walks of life, business, and industry are being gradually oriented and trained in the nation's defense program and in the part they will play if the need arises.

The Executive Reserve has grown from a handful of men recruited immediately after the establishment of the National Defense Executive Reserve by the President on February 15, 1956, to slightly over 1,200 members as of the National Defense Executive Reserve Conference held last year in Washington, D. C. Since its authorization two years ago, twelve departments and agencies of the federal government have established Executive Reserve units.

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These are the departments of State, Defense, Commerce, Justice, Labor, and Interior, United States Information Agency, Interstate Commerce Commission, Small Business Administration, Central Intelligence Agency, Housing and Home Finance Administration, and the Office of Defense Mobilization. While all key government agencies are participating in the reserve program, the Business and Defense Services Administration, with its responsibility for planning for an emergency production agency, will recruit most of this force. Its authorized complement was recently increased from 800 to 1,500 members to permit the establishment of regional units. As of March 28, 1958, the total present strength of the Business and Defense Services Administration Reserve stood at 652.

Who They Are

The Reservists are outstanding executives and administrators who have signified their immediate availability to man the defense production and controls agencies in any future emergency. Drawn from all parts of the United States, reservists are recruited from industry, labor, agriculture, the professions, and public and private institutions. Most of those who have been drawn to date from the containers and packaging industries are attached to the Executive Reserve of the Business and Defense Services Administration, U. S. Department of Commerce.

So that you may learn who they are, a list of current reservists accompanies this article. Since this program is an expanding one, it is probable the number of reservists in this area will at least be doubled. If you are approached and invited to participate in the Reserve, you may wish to consult with some of these reservists whom you may know personally—to get their appraisal of the importance of the program.

Set Up By Congress

In 1955 Congress amended the

Defense Production Act by authorizing the President to provide for the establishment and training of a nucleus executive reserve for employment in executive positions in government during periods of emergency. Study and discussion within the government and among private companies and individuals led to doing it this particular way. It reflected a growing recognition that effective use of executive talent is a major key to successful mobilization of our nation's resources.

Anticipating this legislation, the Office of Defense Mobilization in 1955 tried out a pilot reserve of about 50 executives from industry, private institutions, and labor. Its project was to test the methods and techniques used in recruiting and training high level personnel for mobilization assignments. ODM learned from this that executives do volunteer for such service when properly approached and when adequately informed of the program's objectives. It also learned that the individuals and their companies are willing to commit a reasonable amount of time away from home to attend Executive Reserve training sessions.

Training Of Reserve

Training for the reserve includes orientation sessions, study of continuous and up-to-date details of governmental organization and programs planned for mobilization use, participation in the testing of mobilization plans, and use of an information program to keep each reservist fully abreast of developments in his field affecting the capacity of the United States to conduct a modern war. This training takes place at Washington, as well as at regional levels, and at relocation sites.

Viewing the work of the Executive Reserve in its true perspective, we find that the Department of Commerce is but one of the major federal agencies having such a program. Within the department, the executive reservists in the field of packaging are attached to the

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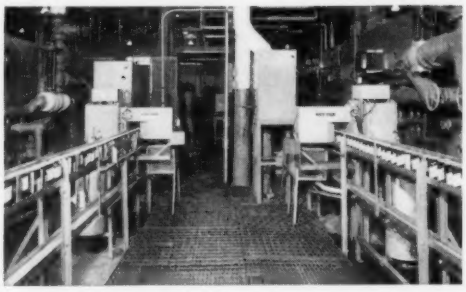

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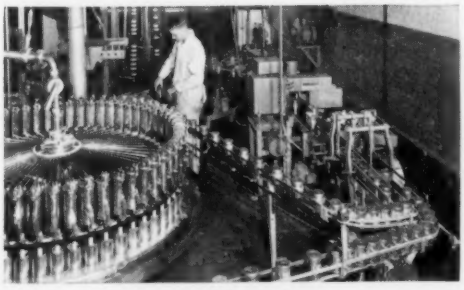

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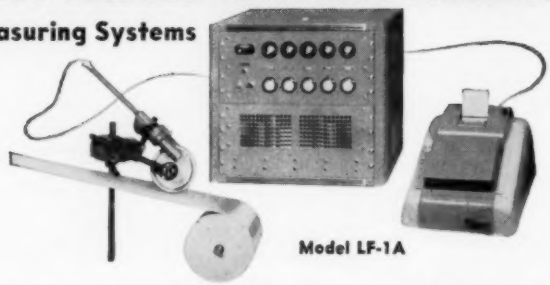

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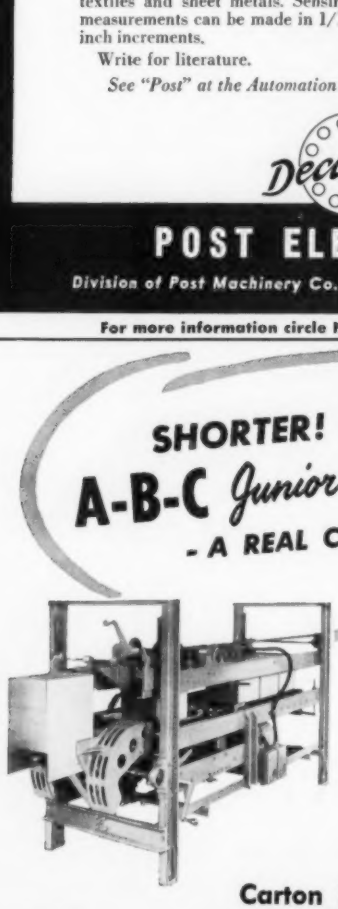

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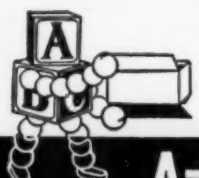

A-B-C PACKAGING MACHINE CORP., TARPON SPRINGS, FLORIDA

Business and Defense Services Administration. Basically the BDSA has developed and will administer a system of materials controls to expedite production, procurement, and construction for military and atomic energy programs. BDSA also makes recommendations to the Office of Defense Mobilization concerning the expansion of production of strategic and critical materials and the maintenance of a mobilization base for other industries—all of which require government expenditures under authority of the Defense Production Act.

Industrial Preparedness

We have separate approaches to industrial preparedness and to mobilization readiness. The BDSA has these tasks for industrial preparedness:

1. Development of a production materials controls system for use in any emergency.
2. Estimates of requirements for production of materials and equipment for defense use and essential civilian industries under full mobilization.
3. Development of special orders and regulations for specific industries in connection with the above.
4. Collaborating with other agencies and industry to determine deficiencies in industrial capabilities and to recommend action about them.
5. Making recommendations to OMD regarding national stockpiles, and maintenance and expansion of an industrial mobilization base.

Mobilization Planning

Our Containers and Packaging Division follows the pattern of the Business and Defense Services Adtions are as follows:

1. Plans for administration of production controls as required.
2. Complete the initial identification and rating of most critical wartime products and facilities.
3. Review expansion goals and revise them as military requirements become firm.
4. Develop production controls (standby orders) to cope with full

mobilization or stepped-up partial mobilization when and if that occurs.

5. Consultation with industry on proposed supporting industry orders and regulations as each major phase is developed.

6. Maintain the requirements-capacity analyses on a current basis so as to determine wartime gaps or deficiencies.

7. Develop programs to overcome deficiencies, particularly after military and civilian survival requirements are received.

8. Work with industry groups to stimulate and encourage the review of their plans to deal with possible atomic attack.

9. Assist industry in planning for the physical security of key critical plants to be assigned because of the department's primary interest in the industrial area.

10. Act as liaison with industry through advisory committees in connection with stockpiling and expansion programs, which may entail calling for requirements and supply analysis to substantiate materials expansion.

Keeping Up To Date

Thus there are two important phases to the whole job. First, there is the initial or preparational work, and second, the matter of keeping it all up to date. The Containers and Packaging Division of BDSA has its share of constant maintenance of the original industry data collected. This has to be on an up-to-date basis. We may need to review from time to time an industry's potential output—checking it against the probable demand that would be placed on that industry during an emergency.

Among the full time employees of our division, each analyst has to develop the mobilization plans necessary for each commodity assigned to him. All of these people must follow the operating outlines for the Containers and Packaging Division with respect to mobilization planning so as to keep its policies consistent with the national defense program. (*Turn Page*)

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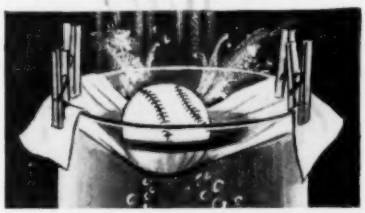

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Plan In Advance

One of the keystones of the entire program is that the industrial mobilization and defense planning for the containers and packaging industries must be done prior to any emergency. This is necessary in order to assure the nation of our maximum readiness and effectiveness. Business men have vivid memories of the confusion rampant during the early days of World War II. Through our Executive Reserve program and through the concerted efforts of the government departments and agencies involved, we are capitalizing on the lessons learned and cumulative experience acquired during recent years, so that we may come up with programs meeting emergency needs.

Getting down to specific cases, we have to maintain maps showing geographical locations of all producers and we must record the potential hazards due to strategic locations. We have to consider a host of factors such as the availability of power, transportation, labor, and material. Our plans go into such detail as plant locations by product, target area vulnerability, and capacity of individual plants.

The administration of the Executive Reserve program stems from Defense Mobilization Order I-21. This order establishes an advisory group from outside government to assist the ODM in getting the support of individuals and institutions and recruitment of executive talent. At the same time, the order establishes an interagency committee chaired by ODM and made up of those responsible for the reserve program in the participating agencies. This coordinates recruitment and training, sets standards for selection, and provides also that each department and agency establishing a unit of the Executive Reserve shall have a training program for its reserve.

Demands On Reservists

We ask that reservists be mature and experienced persons old enough to be seasoned and not too old for the pace of emergency operations. The government prefers as broad an experience as possible. Also, it desires that each reservist have a wide acquaintance among other executives and specialists in his area. This is especially useful as an aid to recruiting manpower for rapidly expanding agencies.

Reservists must be willing to visit Washington at least once a year for training and to meet at other regional points as required. We ask that their employers agree to this. We also ask that barring unforeseen circumstances these reservists are immediately available for assignment in the event of national emergency. All reservists are subject to a full field security investigation and are given secret clearance.

In spite of the formidable sounding language spelling out our requirements, the fact is that our entire program is voluntary. In the last analysis we rely on the industry-mindedness and sheer individual patriotism of our reservists and their companies. Without their wholehearted support, the Executive Reserve program cannot do its job. With such support, our ability and capacity to meet the unforeseen challenges of the future are unlimited.

Numbers To Remember

Readers wanting to save time when calling or visiting Mr. Lewis and his staff in Washington should take note:

His office is in Room 4041 of the Department of Commerce Building.

His telephone number is Sterling 3-9200, extension 3962.

Executive Reserve includes these men from fields of containers and packaging

Adkins, Shelton J.,
President,
Adkins Manufacturing Co.,
P. O. Box 669,
Gainesville, Florida

Angell, Jesse,
Marketing Manager,
Brainard Steel Division,
Sharon Steel Corp.,
Griswold Street,
Warren, Ohio

Baumgardner, Frank,
Div. Sales Manager,
Anchor Hocking Glass Corp.,
1408 Prudential Bldg.,
Jacksonville 7, Florida

Beatty, Michael F., Jr.,
1802 East 32nd Street,
Tulsa, Oklahoma

Bullock, Robert G.,
Dist. Sales Manager,
Chase Bag Company,
726 Union Commerce Bldg.
Cleveland 14, Ohio

Carr, Harold J.,
Vice President,
Owens-Illinois,
P. O. Box 1035,
Toledo 1, Ohio

Carter, Glenn E.,
Mgr., Paper & Printing Mkts.,
Reynolds Metals Company,
2500 South Third Street,
Louisville, Kentucky

Clay, John C.,
Asst. to Exec. Vice Pres.,
National Starch Products, Inc.,
270 Madison Avenue,
New York 16, New York

Couch, Robert deS.,
Mgr., Carton & Cont. Div.,
General Foods Corporation,
490 E. Michigan Avenue,
Battle Creek, Michigan

Dennis, Stanley W.,
Pres., Deniseal, Inc.,
2323 Evergreen St.,
Baltimore 16, Maryland

Edwards, Walter A.,
Mgr., Govt.-Ind. Relations,
Owens-Illinois,
1627 K Street, N. W.,
Washington, D. C.

Grace, Arthur H.,
Bemis Bro. Bag Co.,
408 Pine Street,
St. Louis 2, Mo.

Griepenkerl, E. C.,
Davison Chemical Co.,
Div. of W. R. Grace & Co.,
12 Hickory Rd.,
Summit, New Jersey

Hamrick, A. W.,
Chief Field Engineer,
Signode Steel Strapping Co.,
2600 North Western Ave.,
Chicago 47, Illinois

Kelleher, Hugh J.,
Pres., Hugh Kelleher & Assoc.,
1058 Chestnut St.,
San Francisco, Calif.

Lanigan, Gregory J.,
Amer. Flange & Mfg. Co., Inc.,
30 Rockefeller Plaza,
New York 20, New York

Lea, Leonard G.,
133 Upland Way,
Haddonfield, New Jersey

Leinbach, F. S.,
Exec. Vice President,
Riegel Paper Corp.,
260 Madison Ave.,
New York 16, New York

McCarthy, Vern I., Jr.,
Vice President,
Vulcan Containers Inc.,
P. O. Box 161,
Bellwood, Illinois

Martin, R. J.,
The Martin Bros. Cont. & Timber Prod. Corp.,
Oakland, Oregon

Mengel, A. W.,
Sales Manager,
Cochran Continental Container Corp.,
P. O. Box 1466,
Louisville 1, Kentucky

Postweiler, N. W.,
Eastern Sales Mgr.,
Packaging Materials,
Riegel Paper Corp.,
260 Madison Avenue
New York 16, New York

Rawak, George,
Vice President,
Wraps Incorporated,
853 Broadway,
New York 3, New York

Reed, R. Chester,
Supervisor, Packages & Shipping, Refining Dept.,
The Texas Company,
136 East 42nd Street,
New York 17, New York

Sprague, Matthew F.,
Adm. Asst., Sales, Container Div.,
Jones & Laughlin Steel Corp.,
405 Lexington Avenue,
New York 17, New York

Van Meter, Eugene R.,
Vice President,
Paper Container Div.,
Continental Can Co., Inc.,
349 Oraton Street,
Newark, New Jersey

Varey, William C.,
Sales Representative,
Arkell Safety Bag Co.,
511 Delaware Avenue,
Towson 4, Maryland

Vaughn, William E.,
Asst. Gen. Mgr. of Sales,
American Can Company,
100 Park Avenue,
New York 17, New York

Wilson, Dorian M.,
Sales Manager,
Paper Board Division,
Sutherland Paper Co.,
243 E. Paterson St.,
Kalamazoo, Michigan

Wilson, George L.,
Mgr., Moulded Pulp Prod.,
Lily-Tulip Cup Corp.,
122 East 42nd Street,
New York 17, New York

Zahn, Lawrence H.,
Mgr., Methods & Pkg. Dev. Div.,
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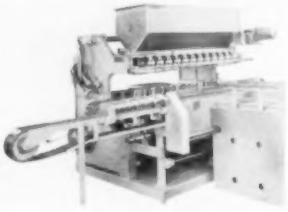
Versatile Filler

The Filler Machine Co., Inc., announces development of Model SL-58, a filling machine that permits an operator to make changeovers to different size containers in a matter of minutes. The machine handles semi-liquid and semi-solid products, filling up to



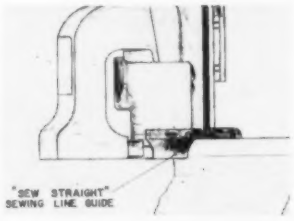
250 glass, plastic, or metal containers/min., by either the bottom up or clean cut-off filling method. Containers up to 2-lb. and 1-qt. sizes are accommodated. A spring lift rising table is set to the correct height for various containers by an adjusting screw. The machine has a no jar—no fill device which prevents the filling mechanism from operating when there are no containers to fill. A combination walking beam and pin-type push bars index containers smoothly through the machine. Circle No. 1.

Rubber Products Tube Marker

Industrial Marking Equipment Co. has a newly designed mechanical tube imprinting machine. It was developed for marking, dating, and coding rubber or plastic tubes or tube-type products. The unit utilizes a heated dye transfer process. A variety of colors is available and interchangeable brass dies provide imprint on rubber, rubber-coated, or plastic tubular products and wire that lend themselves to intermittent feeding. Circle No. 2.

Sewing Line Guide

Union Bag-Camp Paper Corp. has developed a sewing line guide known as the "Sew-Straight." This guide is said to insure a constant and uniform sewn top closure on open-mouth multiwall bags. The guide makes it possible to sew a straight line closure within one



inch of the bag top. It is used in conjunction with an "E" type sewing head, and speeds over 20 50 lb. sewn multiwall bags/min. have been achieved. Circle No. 3.

Stainless Steel Bottles

Tubing Seal Cap, Inc., in conjunction with Riker Laboratories and Allegheny Ludlum Steel Corp., has designed a new type of stainless steel bottle for dispensing internal medication by the aerosol process. The bottle is 13/16″ in diameter and 2-1/2″ long. Stainless steel was chosen because of

its corrosion resistance. The valve stem is also constructed of stainless steel. A slight pressure on the top of the bottle releases a measured amount of medication in spray form. Among the advantages claimed for this new container are the protection of drugs against contamination, light, and air, protection against spilling, and, for all practical purposes, unbreakability. Circle No. 4.

Small Parts Counter

Avion Div., ACF Industries, Inc., announces development of an

electronic device, Model 221, that counts small parts by weight and gives a visual indication when a predetermined package or batch weight has been reached. The Model 221 weight indicator is sensitive to within 1/250 oz., Avion

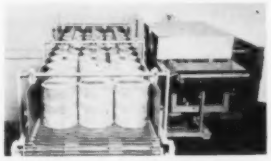
says. It is used by placing the weight or number of pieces to be counted on the weighing platform. The set point is adjusted. Visual limit markers are manually set to indicate the tolerance desired. For checkweighing operations, the indicator is adjusted once to the desired weight, as are the visual tolerance limits. Circle No. 5.

Thermoplastic-Coated Labeling Tape

Nashua Corp. announces the Thermo-Tayper-Printer, a dispenser of a thermoplastic-coated paper packaging and labeling tape. The machine is said to combine the advantages of handling dry tape, and printing and dispensing ready-to-use tape for marking and sealing. It features quick-change type sleeves with removable type using standard Base-Lock mats. A 300-ft. length roll of tape up to 1" in width can be accommodated. A single motion pull and cut-off mechanism is featured. Activation of the tape is by an electric heating element in the dispenser. Circle No. 6.

Case-Transfer Mechanism

J. L. Ferguson Co. has developed a case-transfer mechanism to be used with its Packomatic case-loader. This device is said to make



possible speeds up to 20 cases/min. on a line where cases are hand formed. The case-transfer feature permits the high-speed loading of six No. 10 cans into end-opening corrugated shipping containers. One attendant is required for the operation of the case-loader. The case-transfer device, shown on the right above, automatically delivers the open case to the loading horn where it is filled with six

1 **Staple special cartons** and corrugated fillers far faster with powerful DUO-FAST Air Pliers. Portable. You save time by taking tool to the work, instead of moving work to a big stationary stitcher!

2 **Attach tags, labels, freight bills** with DUO-FAST "Outward-Clinch" Stapler. Staple-legs drive in, then out to guard carton contents from damage. Holds better than tape at 1/10th the cost!

Which of these 3 stapling ideas can save most in your packaging?

Shown here are 3 of the ways DUO-FAST automatic stapling can reduce costs for you. There are many more.

Cartoning, bagging, padding, tagging—whatever your packing operation may be, you'll do it faster, neater and easier with a handy DUO-FAST Stapler.

Ask your DUO-FAST man. With over 150 staple-tacking models to draw on, he'll show you the safe, accurate, *automatic* way to streamline your fastening methods.

Free maintenance service. And remember: every DUO-FAST Stapler carries a money-saving Free Service Guarantee! Send coupon below for free "Timesavers" Bulletin FT-50.

3 **Make up cartons** for a fraction the cost of tape with a DUO-FAST Footpower Stapler. Leaves both hands free for neater, faster work. Easily portable—weighs just 38 lbs.

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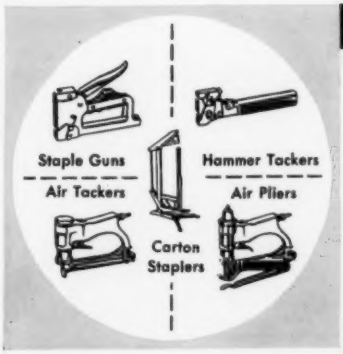

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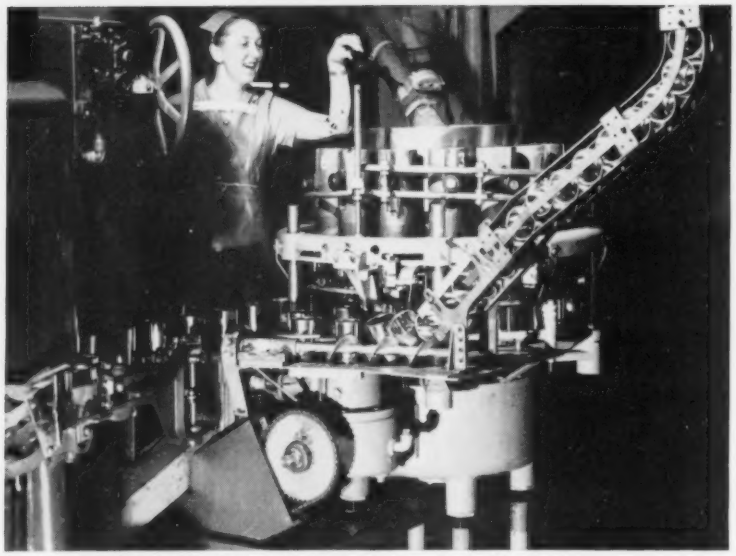

A single operator fills from 280 to 300 cans of applesauce a minute with this RP-14 filler at Silver Shore Co-op Inc., Sodus, N. Y., according to the General Manager, A. B. Loring.

Want to fill applesauce fast and still be accurate?

Look then to Pfaudler and the RP-14 filler for speeds up to 350 cans a minute to ± 1/10 oz. accuracy.

Other Pfaudler fillers will take you as high as 1000 cans a minute, but from an investment standpoint the RP-14 is ideal for the medium-sized company which packages only two or three months a year.

No downtime—The RP-14 is designed to give you uninterrupted filling at full production speeds. It has a no-can-no-fill mechanism. There are only four primary wearing parts—valve and piston rollers, valve trip cams, and wear pads on valve locks. All four are durable, low cost, easy to replace.

Versatile—With the RP-14 you can handle tin, glass or composition containers in diameters from 202 to 404 in any height. You can also use it to fill berries, citrus fruit concentrates, baby foods, fruit purees, fruit sauces and preserves, syrups and toppings, tomato paste, dairy products, even dog food.

Twenty minutes to clean—It takes one man, working *without* tools, twenty minutes to clean an RP-14 filler thoroughly.

No tear-down—You do *not* have to tear down an RP-14 between filling seasons.

For more information, send the coupon.

FOOD EQUIPMENT BY PFAUDLER

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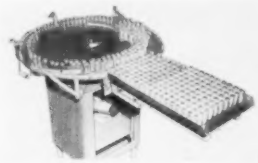
No. 10 cans, and finally up-ended and discharged for top/bottom case sealing. Circle No. 7.

Plastic Tubes Filler/Sealer

Arthur Colton Co. announces Model 172, a high-speed machine that fills plastic tubes with paste, cream, or liquid materials and seals them in an automatic cycle. Standard or heavy-wall polyethylene tubes are handled at rates up to 120 tubes/min. Tubes up to 1" in dia. and 7-7/8" long can be filled at the 120/min. rate in twin filling applications. Maximum fill capacity is 8 fl. oz. The machine consists of two conveyors, a filling unit, a heating unit, and a sealing unit. Flow of tubes is from the loading section to the filling station. After filling, the tubes are transferred to the sealing conveyor where they move through electric heater units, a sealing station, a cooling section, and are automatically unloaded. Circle No. 8.

Unscrambling Machine

Island Equipment Corp. has extended the possible applications of its Styl-O-Matic straightline

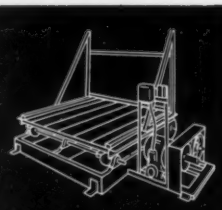


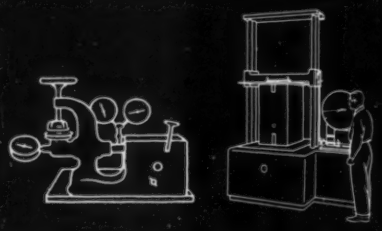
unscrambler by lengthening the infeed section and removing the side guard. The new arrangement makes it possible to receive containers from wide belts set at right angles to the machine, unscramble them, and discharge them single file for succeeding operations. Developed for unscrambling containers delivered by wide-belt Lehrs without aid of an operator, the extended unscrambler offers new potentialities. Circle No. 9.

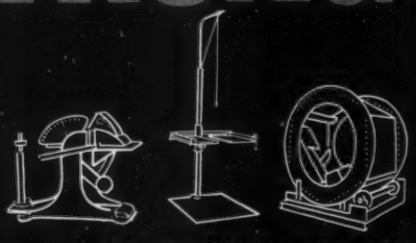
Bread Wrapping

Western Waxide Div., Crown Zellerbach Corp., has developed a new bread wrapping, Crown-Seal. This new material, a specially formulated polyethylene film, is said to be soft and pliant, possessing high resistance to tearing. The Spencer Chemical Company developed the special polyethylene resin which is extruded into the Crown-Seal overwrapping film. Western Waxide has developed a conversion attachment for AMF standard and super wrapping machines

HOW STRONG IS STRONG ?







Don't buy or sell boxes, cartons or any shipping containers unless they are tested for strength by a TMI package tester.

This will avoid any loss of your time or money and will assure you that your product arrives in perfect condition.

TMI, well-known for testing instruments, carries a complete line of testers such as: Compression, Vibration, Revolving Drum, Conbur, Puncture, Drop and all other testers for component parts. These instruments are reasonably priced, highly accurate, easy to operate and cost little to maintain. *All technical specifications are met.*

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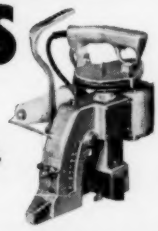

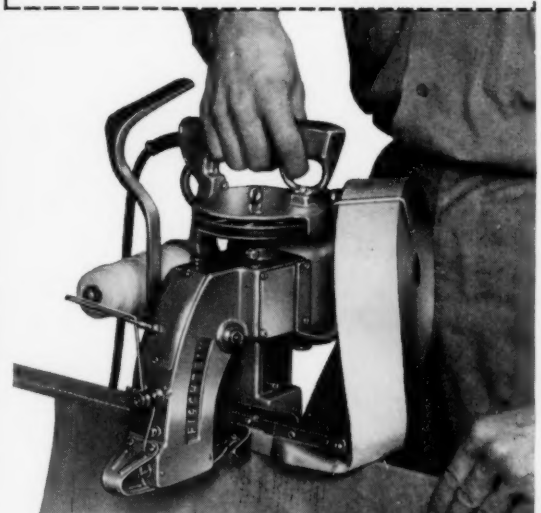

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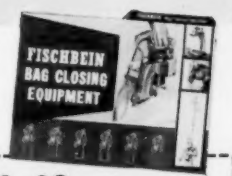

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U.S.I. POLYETHYLENE NEWS

A series for plastics and packaging executives by the makers of PETROTHENE® polyethylene resins

JUNE/JULY 1958

Packaging Notes

New Surface Treatment for Polyethylene uses fluorine to make poly bottles and containers substantially impermeable to gases and volatile chemicals. The fluorination process, described in a recent patent, may make possible polyethylene packaging of such items as liquid cosmetics, aromatic solvents, oils and aerosol formulations.

The fluorination process is claimed to be simple and economical. Film or bottles, washed free of foreign matter, are brought in contact with pure fluorine or a fluorine gas mixture at room temperature or at up to 50°C. In a typical test, loss of a volatile liquid was claimed to be reduced from 5.67% in an untreated bottle to .05% in a fluorinated bottle over the same period of time. In another test, treated film transferred less than a sixth as much oxygen as untreated film. Other properties of polyethylene are said to be unchanged by the process.

Tear Tape Opening for polyethylene coated package is being used by one manufacturer. Product is packaged in a poly-coated aluminum foil pouch with a 3-lb. cotton thread applied as part of the extruded poly coating. It is believed that this method may be used with equal success on packages of unsupported polyethylene film.

Two New Appointments Announced by U.S.I.

John K. Moffett, Jr.

William H. Rader

John K. Moffett, Jr. has been appointed Assistant Manager of PETROTHENE® Polyethylene Sales. Mr. Moffett has been employed by U.S.I. since 1948 in various production and sales capacities, and has served recently in a sales development position for PETROTHENE resins.

William H. Rader has been made Assistant Production Manager for PETROTHENE resins. As Senior Development Engineer Mr. Rader has been in charge of polyethylene development operations at U.S.I's Tuscola plant.

Film Can Be Drawn Down To Less Than 1/4 Mil With New Medium Density Petrothene® Resin

Provides Added Safety Margin at Commercial Film Thicknesses

Super-thin (0.2 mil) blown film of PETROTHENE 239-27 is so light it virtually floats in air.

U.S.I. has introduced a new medium density polyethylene resin that makes possible extrusion of film in thicknesses as low as 0.2 mil. While few commercial uses exist for film of this gauge, the new resin offers a greater margin of flexibility during extrusion at conventional thicknesses such as 0.4-0.5 mil.

The new resin, called PETROTHENE 239-27, has a density of 0.929, placing it in the medium density polyethylene range. Film made from it has increased stiffness, with excellent gloss and clarity. This high clarity, and the ease with which low thickness film can be extruded, is expected to make the resin of particular value in thin film applications such as drycleaner garment bags.

Stiffness Makes for Easier Handling

The new resin brings an added advantage to the manufacture of garment bags:

Film extruded from it has a high degree of stiffness and has less tendency to cling to garments. In soft goods packaging, this added stiffness makes for easier handling on the packaging line. Packages and bags made with the lighter gauge film are also easier to tear open.

Extruders may obtain specifications and other technical data on PETROTHENE 239-27 resin by writing to PETROTHENE Polyethylene Dept., U. S. Industrial Chemicals Co., 99 Park Avenue, New York 16, N. Y.

Group Begins Second Year Of Plastic Pipe Promotion

The Plastic Pipe Research Council recently outlined the second-year plan for its NSF (National Sanitation Foundation) plastic pipe program.

Cornerstone of the Council's promotion is a research and information program which includes producing slide films, placing informative articles in leading consumer and industrial publications and a brochure entitled, "Safe Transportation of Drinking Water — Your Key to Public Health." The campaign is aimed at persons who buy, specify or permit the use of plastic pipe approved for transmission of drinking water. It is supported by a group of pipe manufacturers and raw materials suppliers, including U.S.I.

Booklet on Resin Quality in Housewares is Offered

A 24-page illustrated booklet containing tips for plastic housewares buyers is now available from U.S.I. The booklet, "The Goose That Laid the Golden Egg," emphasizes the importance of resin quality and good production practices in maintaining the market for polyethylene housewares. It points out what guides to judging quality are available to the buyer. Copies of the booklet are available to polyethylene molders for distribution to their customers. Write Editor, U.S.I. POLYETHYLENE NEWS, 99 Park Avenue, New York 16, N. Y.

Extrusion Coaters Report Large Increase In Facilities

The number of extrusion coating machines in the U. S. has risen to approximately 45, according to a recent report by the Polyethylene Extrusion Coaters Group of the Specialty Paper and Board Affiliates.

The large increase over the number of facilities available three or four years ago can be attributed to rapid growth of uses for polyethylene coated paper, board, film and foil in the food, dairy and industrial packaging industries, and increasing consumer acceptance of polyethylene coated containers.

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
99 Park Ave., New York 16, N. Y.
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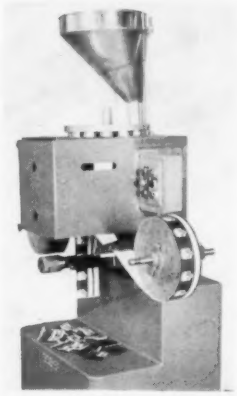
for use with Crown-Seal. The attachment applies heat to Crown-Seal-wrapped loaves as they move down the line, sealing the film. Circle No. 10.

Vertical Packaging Machine

Pak-Rapid, Inc., announces a new



high-speed, continuous motion vertical packaging machine. Cantilever construction with deep throat access permits direct over conveyor installation. The design permits rapid interchangeability of various feeding devices for feeding liquids, gases, powders, granulars, and solid items. The machine features a retractable volumetric filling head for ease of change-over and maintenance. Another feature is package size adjustability for width and length without the aid of change parts. The machine will run any heat sealing packaging material, excepting unsupported plastic film. It will register print front and back, or two supply rolls can be used to fabricate packages of dissimilar packaging materials. Circle No. 11.

Table-Top Sealer

Mercury Heat Sealing Equipment Co. has developed a new automat-

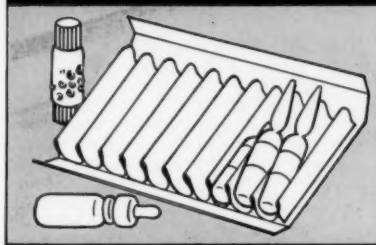
ic table-top sealer for use with polyethylene bags. A midget motor applies pressure and dwell time for strong, waterproof seals. The

RONDO *"the pack with the built-in shock absorber"*

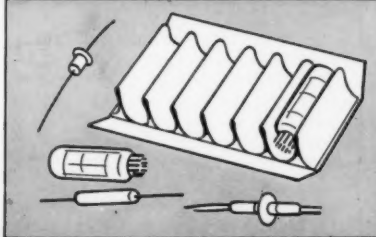
HOLDS and PROTECTS SMALL, DELICATE OBJECTS While Handled in Production, Shipment and Storage

THE IMPROVED PACKING for:

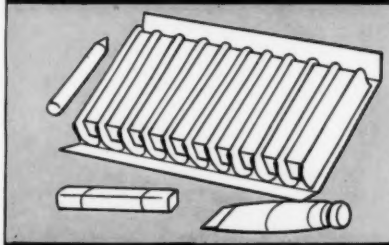
DRUG AND COSMETIC VIALS



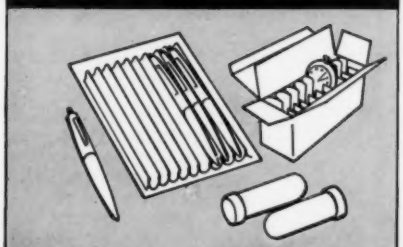
ELECTRONIC COMPONENTS



ARTISTS' MATERIALS



PENS AND OTHER ARTICLES



The principal feature of all RONDO packs is the spring-clip action of its fluted partitions, which hold inserted items firmly yet gently in a cushion of air. This outstanding advance in packaging design is serving manufacturers the world over.

Typical items that can usually be better packed in RONDO are: drug and cosmetic vials, lipstick and cosmetic containers, medical ampuls, ointment tubes, suppositories, hypodermic needles, chemicals; also numerous electronic components, artists' materials, oil and water color tubes, pastels, crayons, pens and similar objects, watches, carbide-tipped drills, tablets, wafers, etc. Our present facilities accommodate objects with diameters of 8 to 26 mm.—eventually larger.

ADVANTAGES of the RONDO METHOD . . .

- Protects objects exceptionally well against shock,
- Eliminates usual need of added padding for safety,
- Prevents loss through breakage,
- Reduces shipping cost because of lightness,
- Cuts handling and packing time,
- Uniform application throughout production, packing, shipping and storing.

RONDO IS A PAPER PRODUCT, SOLD AT PAPER PRICES

Submit your special packing problem for our suggested solution. Illustrated brochure on request.

RONDO PROCESS AND DESIGNS COVERED BY PATENTS IN ALL MAJOR COUNTRIES

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Representatives: C. S. Shotwell, 527 S. Alexandria Ave., Los Angeles, Cal.
Brown & Scratch, 664 N. Michigan Ave., Chicago, Ill.

TITE-CAP did the job with one machine!

TITE-CAP'S NEWEST SCREW CAPPER is an extremely versatile machine offering for the first time *positive torque control* to assure uniform tightness of all caps. Now, with one machine, you can apply screw caps, lug caps, metal and plastic caps — shallow to deep skirt. It handles both rounds and odd shapes in both jars and bottles. Write for Tite-Cap Bulletin SC-585.

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Automatic Screw Cappers • Automatic Hopper Feed Units
Lid Sealing Machines for Friction Lids, Seals, Plugs
Cappers for Metal and Plastic Covers, Caps and Spouts
Spinning and Crimping Machines • Flange Cork Machines

top opens to expose 12" sealing jaws covered with Teflon strips to prevent bags from sticking. An adjustable bag rest accommodates bags of varying lengths. The compact machine measures 14" x 10" x 9" when closed. A smaller model with 8" sealing jaws is also available. Circle No. 12.

Electronic Checkweigher

FMC Packaging Machinery Div. of Food Machinery & Chemical Corp. announces a new electronic checkweighing machine designed to sense weight variation within plus or minus 1 per cent at high speed. At a top speed of 400 units/min., weight discrepancies are detected "on the fly." The no-stop, constant motion machine handles round, conical, rectangular, oblong, or irregularly shaped packages in sizes ranging up to 10" wide by 10" long. Weight ranges from 1 oz. to 1 lb. or 8 oz. to 3 lbs. The height of the unit is adjustable to fit into any in-line conveyor system from 30" to 42". Circle No. 13.

Powder Filling Machine

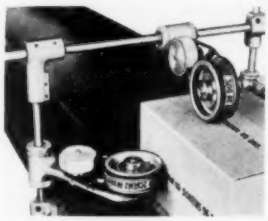
Arenco Machine Co. has designed a powder vial filling machine known as the "Alite". This machine is said to be particularly useful for sticky and hygroscopic powders. The volumetric filling is adjustable through quantities from 25 milligrams to 8 grams, with speeds up to 32 fills/min. Basis of operation is precision setting of agitation and feed to effect a controlled number of auger revolutions to deliver the required amount of powder from the filling hopper into the container. Circle No. 14.

Conveyor Filler

National Instrument Co. announces a new conveyor-type liquid filling machine designed for filling plastic vials, glass, or metal containers in standard or odd shapes. Known as the Filamatic Conveyor Filler, this machine incorporates a positioning mechanism that seats the containers precisely under the filling spouts. The Filamatic Conveyor Filler will handle all size containers ranging from 1 dram to 16 oz. A no vial-no fill device prevents the pump from operating unless there is a container positioned beneath each spout. This machine is available in two models to provide maximum filling speeds of 60 or 120/min. Circle No. 15.

Conveyor Line Markers

William A. Force & Co. has developed a series of conveyor line markers called Force Versa-Matics. Known as the Model 4 ARC, the equipment imprints variable data, such as codes, dates, product identification, symbols, etc., on products as they move along conveyor lines. The Versa-Matic produces large, legible impressions in 1", 2-1/2" and 4" widths, utilizing interchangeable rubber type. Impressions up to 18" long can be



produced when operating on continuous action, and up to 13" long on return actions. Features of the Versa-Matic permit mounting at the top or side of the conveyor line. A new design feature of the machine is chain coupling of the printing roller, transfer roller, and inking roller to assure identical surface speeds for clean printing and minimum wear on rolls. Circle No. 16.

Bench-Type Coater

L. R. Wallace & Co. announces a new heavy duty bench-type coater. It is available in four types—a single top coater, bottom coater, and two double coater models for coating one or both sides. These coaters and glue spreaders are made in lengths ranging from 8" to 60" and are available with feeding reservoirs. Uses include the application of paints, lacquers, plastics, and adhesives to flat surfaces. Circle No. 17.

Circuate Stitching Method

Acme Steel Co. has developed a box stitching method in which stitches are cut and formed from a continuous coil of wire, driven into both outer and inner flaps of fibreboard boxes, and clinched inside the inner flap without any mechanism entering the box. Called circuate wire stitching, the method eliminates the need for retractable clinching anvils, thereby increasing production speed, while at the same time reducing the chances of product damage. Heart of the new method consists of Acme's new N6 series box stitching machines with specially designed formers, shoes, and wire arcing mechanisms, which make self-clinched stitches possible. Circuate stitches can be used to span the center seam of regular slotted boxes. Up to 700 average size boxes

can be stitched per hour. Approximately 13,000 stitches can be obtained from a 25-lb. coil of flat stitching wire. Circle No. 18.

Multi-Unit Automatic Packaging

Mead-Atlanta Paper Co. announces a fully automatic packaging system called Cluster-Wrap for multi-unit food cartons such as ice cream sandwiches, frozen food cartons, cigarettes, etc. A self-contained machine and carton process, the Cluster-Wrap system operates in continuous motion so that the product feeds into one end of the machine while the die-cut printed carton is fed simultaneously from the top of the machine on a chain conveyor and folded over the product. Self-locking tabs that are a part of the carton secure the contents on the bottom side. No glue is used in the entire process. Cluster-Wrap was designed for multi-unit item packages in square, rectangular, or flat containers. Circle No. 19.

Score Bend Tester

Paper Industry Instruments, Inc. announces the availability of the Ohio Boxboard score bend tester. The present instrument combines two measurements—the force necessary to "open-up" a folded carton blank and the forces necessary to fold carton flaps. The instrument has been designed as a production control tool. Forces are applied by a motor driven platen and registered on an eye level dynamometer dial. Up to 2,000 grams can be measured. Circle No. 20.

Label Paste

Carl H. Biggs Company announces a spot label paste, Helix Paste #701. A vinyl-based product, the new paste offers outstanding adhesion to all types of tin, metal, glass, or plastic surfaces. It is resistant to water, moisture, heat, and chemical fumes, making it especially suitable for use in canning operations. Circle No. 21.

Polyethylene Packaging Machine

E-Z Packaging Corp. presents its E-Z "Universal" automatic polyethylene packaging machine, useful for packaging a wide range of products. The machine features a completely automatic operation. The weight of the material being packaged initiates the operating cycle. The result is hairline sealing on all four sides for an airtight package. The machine is available with castors for portable application. Circle No. 22.

for INDUSTRIAL PACKAGING

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CANS

Special square and rectangular cans. Available in 25 different base sizes
Round slip cover cans in 51 different diameters
Cans may be lithographed in your design and color combinations
RICHMOND
RICHINE
Round cornered, square screw top cans. Base dimensions from 2¼" x 2¼" to 11½" x 11½"

Choose ELLISCO CANS, especially suitable for your products, from the wide variety of standard and special sizes—screw-top, friction-top, slip-cover and tear-strip—plain tin or lithographed. ELLISCO specializes in your can needs—large or small quantities. Write, wire or call for samples and prices. We are familiar with Military Packaging Specifications.

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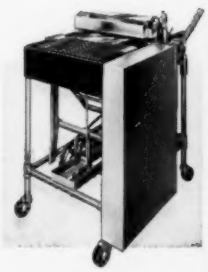
Circle No. 251 on Card

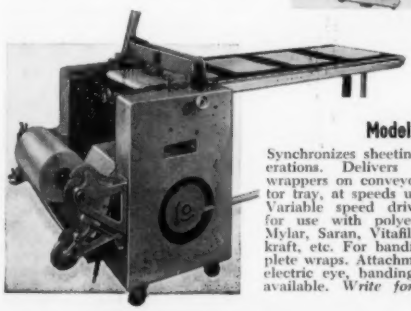
CORLEY-MILLER FOR ECONOMICAL **WRAPPING . SHEETING . HEAT SEALING**

Corley-Miller Model MPS WRAPPING MACHINE

Semi-automatic. Wraps a great variety of package sizes. Readjusts speedily. Wraps up to 21 packages per minute. Uses roll wrapping material or cut-to-size sheets. Gluing mechanism available for non-heat sealable wrappers. Many time and labor saving attachments available. Popular for single unit wraps and for bundles. Also wraps open trays, some bottles.

Write for Bulletin





Corley-Miller Model BL SHEETER-GLUER

Synchronizes sheeting and wrapping operations. Delivers pre-glued or dry wrappers on conveyor or into accumulator tray, at speeds up to 36 per minute. Variable speed drive sets pace. Ideal for use with polyethylene, cellophane, Mylar, Saran, Vitafilm, acetate, glassine, kraft, etc. For banding as well as complete wraps. Attachments such as slitters, electric eye, banding trough and others available. *Write for Bulletin*

Corley-Miller Model KW "KWIK-WRAP" SHEETER

Cuts sheets of polyethylene, Saran, Mylar, Cry-O-Vac, acetate, or other films from rolls. Delivers cut sheets to finger tips of one or more operators . . . up to 36 sheets per minute. Operators by trip or continuous. Ties in perfectly with conveyorized hand wrapping of cheese, meats, textiles, etc. Two models. 16" and 24" roll widths. Simple, compact, mobile, low-priced.

Write for Bulletin

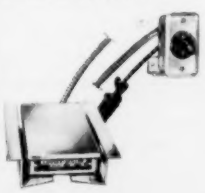
Write for Complete Hot-Plate Bulletins

Model BJ Vertical Polyethylene Sealer

Widely used for sealing polyethylene. Ideal for textile wrapping or comparable work. Vertical ribbed polyethylene sealing surface 5" high by 10" wide, removable for Cellophane or other films. Thermostatic control.

Models BKR and BUR Close-Control Hot Plates

Premium quality plates for close temperature work. Perfect for Saran, Pliofilm, and cellophane too. Thermostat is durable, remote control, precision type. Raised or flush mounting. BKR, 3" x 10" draws 500 watts. BUR, 10" x 10" draws 1,000 watts.



Miller *Wrapping & Sealing Machine Co.*

14 S. Clinton Street, Chicago 6, Illinois
Phone: RAndolph 6-1883

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Filling Machine Analysis

Hope Machine Co. offers a valuable aid to analyzing filling machine requirements. An analysis, in the form of a six-page questionnaire, covers 16 major points about filling machines. It is intended for use as a guide in checking present and future operating requirements. The analysis covers such areas as type of containers used, temperature and viscosity at time of fill, and necessary accessories, such as unscramblers, container cleaners, code and date embossers, top finishers, etc. Circle No. **101.**

High-Temperature Oven

American Instrument Co. has issued a four-page bulletin, No. 2299, describing its "Equa-Therm" oven, a new high-temperature oven now available. This oven produces temperatures ranging from 100° to 750° F. within a 17 cu. ft. work chamber. A table illustrating temperature differentials is included. Circle No. **102.**

Box Selection And Specification

Hinde & Dauch have a new booklet, "How To Specify Corrugated Boxes." This 36-page pamphlet illustrates and discusses conventional types of corrugated board. Seven basic box styles and 60 corrugated packing devices designed for product protection are covered in this guide. Shipping rules and regulations, product examination, packing and shipping methods, and sales procedures are discussed in the booklet. Circle No. **103.**

Steel Drums

Vulcan Containers, Inc., offers literature on its various types of drums. Included in one folder are descriptions of open head and tight head drums (55 gal. capacity), 15-gal. drums (both open and tight head), grease drums (120-lb. and 100-lb. capacity), and 55-gal. agitator drums. All drums are available with a choice of interior: Plain steel, rust preventative, or HI-BAKE protective lining. Exteriors on all drums may be painted to individual specifications. Circle No. **104.**

Envelope Idea Kit

Tension Envelope has prepared an "Envelope Idea Kit for the Packaging Industry." The kit contains actual samples of many different types of envelopes, as well as specifications and suggestions as to when and where to use various styles. Circle No. **105.**

Bundle Wrapping

Battle Creek Packaging Machines Co. has published a folder on its Model 48 bundling machine. This machine overwraps articles in groups of 6 to 24, at speeds up to 60 bundles/min. It can accommodate grouped packages from a maximum 12" x 7-1/2" x 4-1/2" to 6-1/4" x 2" x 2" using kraft, book, sulphite, or other papers requiring glue, as well as heat sealing films. Circle No. **106.**

Packaging Machinery

Scandia Packaging Machinery Co. has published an anniversary brochure titled "1918-1958". A large part of this 20-page publication is devoted to illustrations and descriptions of a number of Scandia machines, including models in the 700, 600, 500, 100, 900, and 800 series. Models in these series are designed for bundling, banding, multiple wrapping, stamping, and high-speed wrapping operations. Circle No. **107.**

Easy Opening Case Sealing Adhesive

Swift & Co. offers a leaflet on Tempseal easy opening case sealing adhesives, illustrating various uses of this product. High shear strength combined with low tensile strength means adhesive grips tightly in transit but releases immediately on vertical pull. Circle No. **108.**

Automatic Wrapping Machine

Schooler Mfg. Co. has prepared a four-page brochure on its Wrapmaster wrapping machine. It wraps using cellophane, waxed paper, or foil with seal made on longitudinal edge giving unbroken panel visibility on all four sides. Machine is adjustable from 12" x 7-1/2" x 2-1/2" to 2-1/2" x 2" x 1-1/2". Circle No. **109.**

Reinforced Paper

American Viscose Corp. has a folder promoting the use of its Rayflex yarns in scrim construction for reinforcing paper, foil, and films. The folder itself is printed on rayon scrim reinforced "Scrimtex" paper, produced by Mosinee Paper Mills Co. and utilizing Rayflex yarns. Scrim constructions are useful as reinforcing agents in papers and films used for protective wrappings, multiwall bag materials, insulating materials, shopping bags, etc. Circle No. **110.**

Conveyor/Carton Sealer

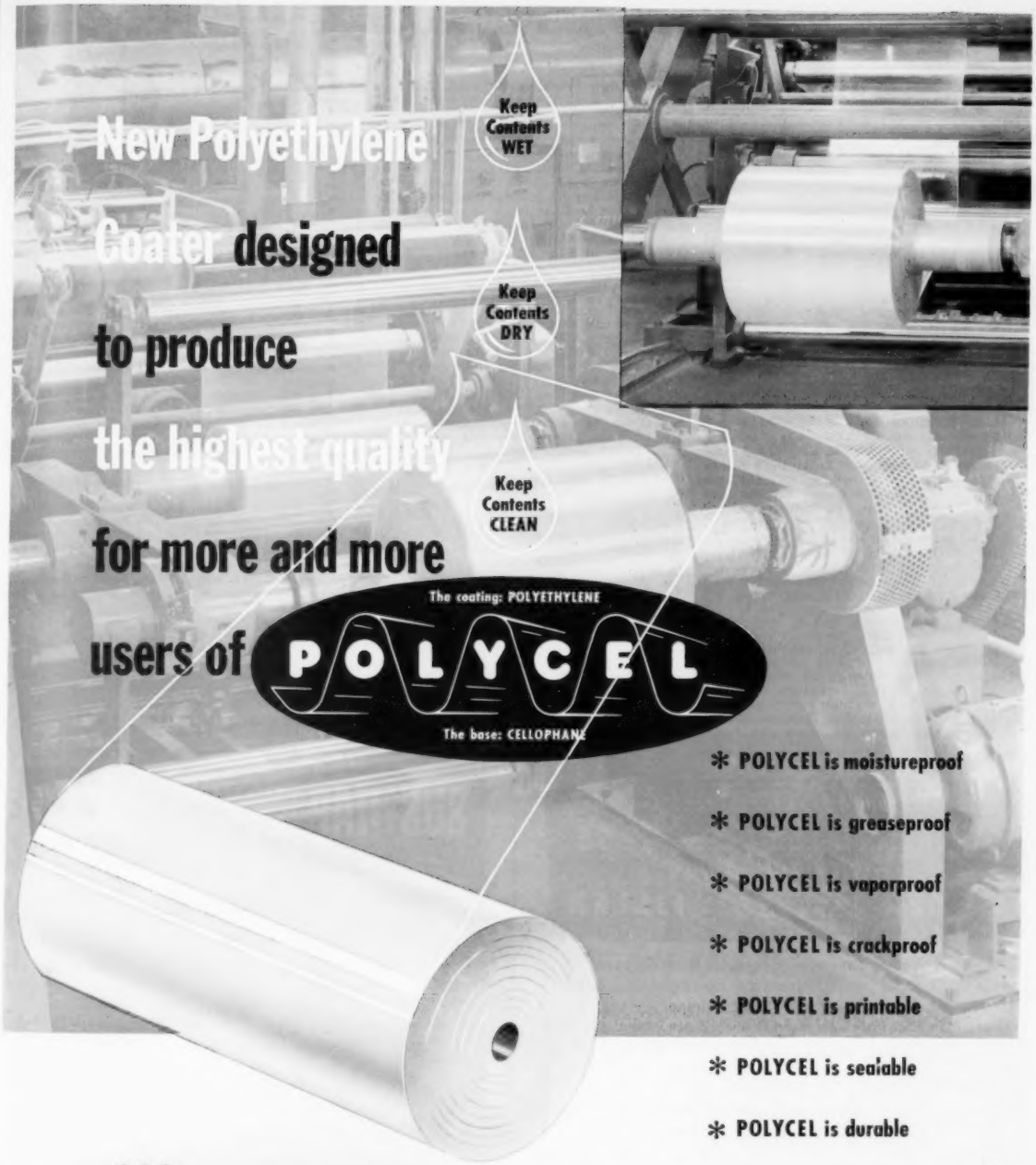
Better Packages, Inc., offers literature on its new Conveyor "Boxize" #5. Cartons to be sealed enter the "Boxize" one at a time from a storage conveyor. Each box measures its own tape length, which is automatically dispensed over the center of the box for quick and easy application by the packer. Release of the sealed carton automatically permits the next carton to enter the sealing unit from the storage conveyor. The tape dispensing unit is adjusted to permit passage of the tallest carton in the assortment being sealed, and can accommodate cartons up to 26" in height. The standard "Boxize" unit handles cartons up to 30" long and 23" wide. Circle No. **111.**

Opening Poly Packages

Bakelite Company has issued Technical Release No. 10, which deals with methods for opening polyethylene-wrapped packages. Among the aids to opening such packages are peelable seals, perforated film, and tear tapes. The technical release tells how peelable seals are obtained, various materials used as tear tapes and how they are placed on a package, and the position of perforations on poly-wrapped packages. Circle No. **112.**

Automatic Jaw Sealer-Labeler

Doughboy Industries, Inc., has a two



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POLYETHYLENE COATINGS:

HPS applies them to Glassine, Foil, Pouch Stock and Other Materials as well as to Papers and Films.

Write for Poly Product Data

*POLYCEL is a registered trademark.

POLYCEL is Polyethylene Coated Cellophane in its most efficient form . . . pioneered by HPS in 1954 . . . and ever since the object of continuous research to make it foolproof for users of flexible transparent packaging. 1958 Polycel is the perfected result of two years of developing the product to meet the exacting needs of converters and direct users.

H·P·SMITH PAPER CO.

HPS 5011 WEST SIXTY-SIXTH STREET • CHICAGO 38

page data sheet on its new automatic jaw sealer, labeler, Model PJS. Head labels are applied and bags sealed in one complete operation for cellophane and coated cello bags, polyethylene, Saran, etc. Machine holds bag for the complete sealing cycle, enabling operator to increase production up to 50 per cent, Doughboy says. Circle No. **113.**

Tenite Polyethylene

Eastman Chemical Products, Inc., offers a 36-page book explaining various uses for Tenite polyethylene resins. Separate sections are devoted to each of the six basic uses for polyethylene: Molding, pipe, film, coatings, blowing, and wire and cable covering. A detailed table of specifications gives a quick picture of the properties of Tenite polyethylene. Circle No. **114.**

Package Forming And Filling

Bell Machine Co. has released an illustrated specification sheet on its Bell-Pak machine Model 914-A. It forms a pouch from roll stock, fills, and seals liquid, cream, powder, or semi-liquid products at speeds up to 400/min. The machine requires only 42" x 41" floor space. It can fill different items, different sizes simultaneously. Circle No. **115.**

Case Packer

Burt Machine Co. has a four-page folder describing three models of its case packers. The machines arrange cans in various patterns for loading into corrugated containers. A unique arranger feature distributes cans in proper arrangement and all the operator has to do is place the empty case over the funnel chute. Filled cases are automatically upended and delivered in a horizontal position. Circle No. **116.**

Package Marking

Algene Marking Equipment Co.'s eight-page brochure describes its roller printer used to mark packages and all types of products. The device is manually operated and can be used on any surface—round, flat, smooth, rough—and any material. It weighs only 11 oz., and produces up to 160 impressions/min., per man. Marking area is up to 2"x 9". Circle No. **117.**

Heavy-Duty Corrugated Containers

Gaylord Container Corp. has published a 28-page brochure, "Drumpak Heavy-Duty Corrugated Containers For Major Appliances." The brochure shows case histories of "Drumpak" applications in packaging water heaters, stoves, washers, furnaces, etc. Specific cost savings and materials handling advantages are documented. Circle No. **118.**

Rigid Foil Containers

Kaiser Aluminum & Chemical Sales, Inc., has issued a booklet describing its rigid foil containers and covers. These containers are produced especially for use in the frozen food and bakery industries, as well as for processors of entree, dessert, and specialty items. Several of the containers are offered with newly developed "cripple-proof" rims, which eliminate cut fingers and provide a more secure grip to container lids when crimped. Two high-speed closing machines for rigid foil containers are also described in this brochure. Circle No. **119.**

Portable Bag Opener

Anderson Bros. has an illustrated data sheet on its Model 134 portable bag opener. It holds up to 200 bags. Blower for opening bag has an air filter, thus keeping air clean and free of foreign matter. Standard machine adjusts to bag sizes from 2-3/4" to 5" in width, and 5-3/4" to 7-1/2" in height. Deviation from standard sizes is possible with special bagger. Circle No. **120.**

Automatic Checkweighing Machines

The Exact Weight Scale Co. offers literature on its Selectrol automatic checkweighing machines. Available in two models, #144 and #145, the Selectrol machine is used for checkweighing, classifying, recording, and sorting. It utilizes Shadograph scales. An automatic transfer mechanism places the commodity on, and removes it from, the scale. The two models are said to be capable of proving weight accuracies in the range of 1 part in 5,000 to 1 part in 20,000. Circle No. **121.**

Wrapping With Paper

The KVP Co. has issued a booklet, "The Mechanics of Packaging." It describes the best methods of handling flexible protective coated papers in storage and in overwrapping. It also lists the causes of wrapping machine troubles. Circle No. **122.**

Polyethylene Tubing

Andmar Plastic Co., Inc., offers a set of three polyethylene tubing sample cards. Each card carries a sample of a different grade of polyethylene tubing. Type B-42 possesses excel-

change from 8 oz. to 2 lb. containers in
15 MINUTES OR LESS
WITH THE NEW
GEYER "SL-58" FILLER

Less than 15 minutes now separate any two runs when you use the GEYER SL-58 filler; in fact, adjacent sizes can be changed over by merely turning a small hand wheel. This time element is particularly important where there are many short runs and many change-overs . . . thus affording cumulative savings of hours or even days of production time each week. In the new, simplified design, the spring lift rising table is set to the correct height for various containers by merely turning an adjusting screw while the "No Jar—No Fill" device requires no adjustment at all.

OTHER FEATURES INCLUDE:

- Handles Semi-Liquid and Semi-Solid Products.
- Fills Up To 250 Glass, Plastic, or Metal Containers Per Minute by Bottom-Up or Clean Cut-Off Methods.
- Takes All Types of Containers Up To and Including 2 lb. and 1 Quart Sizes.
- "No Jar - No Fill" Device Assures Clean, Economical Filling, Eliminates Waste of Product.
- Available in 4, 6, 8, 10 and 12 Line Models.

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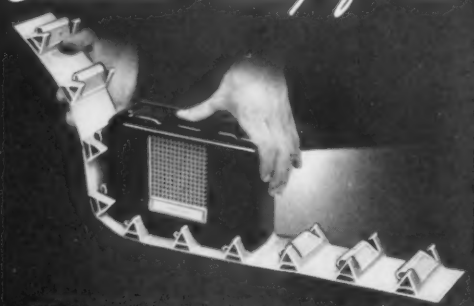
Circle No. 253 on Card

SUS-RAP SIMPLIFIED PACKAGING FOR FRAGILE PRODUCTS
Eliminates Folding of Pads



SUS-RAP is produced in widths, slot sizes, and various strength qualities to ECONOMICALLY package YOUR product . . .

Exclusive VERTICAL-HORIZONTAL suspension safeguards your product both in and out of its shipping carton.

SUS-RAP is engineered to your product and pretested by N.S.T. procedures
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SUS-RAP
Laboratory Developed and Tested Packaging

VANANT COMPANY, INC. 955 S. Water Street, Milwaukee 4, Wis.

Circle No. 254 on Card

lent strength, good clarity, medium gloss, and high slip characteristics, according to its sample card; similarly, types B-11 and B-18 are marked according to these particular characteristics. New sample cards will become available as new types of polyethylene tubing are available. Circle No. **123.**

Gummed Tape Usage

Central Paper Co. has a ten-page booklet entitled "Why Gummed Tape Sticks." It discusses the correct way to apply tape and take care of taping equipment. Circle No. **124.**

Polyester Film

Minnesota Mining & Mfg. Co. has issued a brochure listing various applications for its "Scotchpak" brand heat sealable polyester films. Described as being transparent as cellophane and flexible as thermoplastics, these polyester films are now being used for the packaging of such diversified products as chemicals and metal hardware, food and paint pigments, detergents and caulking compounds, and the like. The brochure also presents a properties and characteristics chart on the films. Circle No. **125.**

Interior Cushioning

Paper Products Mfg. Co. manufactures Ply-Cel, an interior cellulose cushioning material that is described in a current four-page bulletin. It is available in natural, bleached, or combination shades, plain or embossed, with or without a variety of backing papers. It can be delivered in sheets or in rolls. Circle No. **126.**

Short Case Sealer

A-B-C Packaging Machine Corp. has a four-page bulletin describing its automatic short case sealer. Available in eight models, this machine is said to dry any commercial sealing glue quickly. Specifications and floor plans are included for these models, designed to handle cases from 6" to 16" wide, 4" to 18" high, and 8" to 18" long. Circle No. **127.**

Stock Plastic Jars And Vials

Celluplastic Corp. has a four-page catalog sheet illustrating and listing the specifications for a complete line of polystyrene molded vials, squat jars, flexible acetate, and butyrate extruded vials, as well as metal and plastic closures for these packages. These are stock fitments and containers. Circle No. **128.**

Unit Packaging Equipment

Conapac Corp. has published an eight-page illustrated catalog that provides specifications and detailed operating features of its unit packaging equipment. Machines include a "make, fill, and seal" packager, a fully automatic machine for packaging food products and gas-filled flexible packages, a four-track strip packaging machine, and a fully automatic strip packager designed for extremely high-speed handling of coated and uncoated tablets. Circle No. **129.**

Impact Recorders

The Impact-O-Graph Corp. has a four-page bulletin that describes various models of its impact, acceleration, and gravity recorders. These instruments are small in size, and light in weight. They record data permanently on a special wax-coated recording tape. The machines are designed to record shocks, impacts, and vibrations from any direction. A list of specifications and other features of the various models is included. Circle No. **130.**

Steel Strapping

Brainard Steel Div., Sharon Steel Corp., has a twelve-page illustrated catalog that gives complete specifications for its entire line of steel strapping, strapping seals, stretchers, and accessories. Circle No. **131.**

Polyethylene Resins

The Polychemicals Dept. of the DuPont Company offers Bulletin A-2163 It lists 13 different grades of polyethylene resins engineered for specific packaging needs. Included is a comparison chart showing the melt index, density, molecular weight distribution, properties, and packaging applications for each type of resin. Circle No. **132.**

Oil And Grease Resistant Paper

Thilmany Pulp & Paper Co. has a demonstration kit to show the oil and grease resistance of Thilco Repel paper. The kit contains samples of ordinary kraft paper and Thilco Repel paper and capsules of oil, enabling you to see in your own office the performance of this paper. Circle No. **133.**

(*Turn Page*)

Controlled PACKAGING

Low-Cost, Better-Performing Tools of Packaging

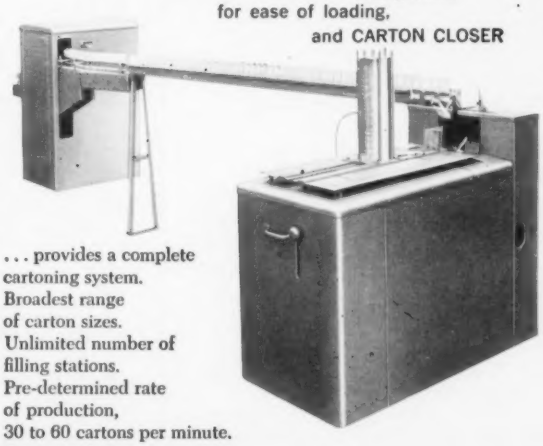
Now, higher-speed-per-station with proven bulk-drop and finish feed features! Model PM-8 Automatic Net Weigher is available for speeds from 40 to 120 per minute. Write for descriptive Catalog No. 55.

WEIGH RIGHT Automatic Scale Co.

WEIGH RIGHT AUTOMATIC SCALE COMPANY
JOLIET • ILLINOIS • U. S. A.

Line Cartoning by BIVANS

CONVEY-O-MAT Carton-forming, conveyorized for ease of loading, and CARTON CLOSER



. . . provides a complete cartoning system.
Broadest range of carton sizes.
Unlimited number of filling stations.
Pre-determined rate of production,
30 to 60 cartons per minute.
Our installations prove this.

Let our representative show you Bivans equipment in operation.

BIVANS CORPORATION
2431 DALLAS ST., LOS ANGELES 31, CALIF.
Distributed by New Jersey Machine Corp.
Hoboken, Cincinnati, Chicago, Los Angeles

Fibre Drums

Continental Can Co., Fibre Drum Div., manufactures a complete line of all-fibre construction drums called Fiberpak. A four-page illustrated brochure lists specifications covering 58 standard sizes with capacities from 3/4 to 67 gals. These containers utilize a telescope lid and are designed for both export and domestic shipping; they are I.C.C. approved for many dangerous articles. Circle No. **134.**

Round Container Labeler

Long and Co., Inc., has a four-page illustrated folder describing the Atlantic Labeler. This is a semi-automatic unit that applies spot or wrap-around labels to round containers ranging from 2-oz. bottle to 5-gal. drum capacity. This unit is moderately priced and can be adapted to cold glue or hot melt adhesives. Circle No. **135.**

Seamless Metal Cans

George D. Ellis & Sons, Inc., offers Bulletin No. 116 covering details of its seamless metal cans. This bulletin not only illustrates the various cans, but also includes tabulations of their fluid ounce capacities, diameters, and body heights, packing per carton, and weight per gross. Circle No. **136.**

Dry Product Fillers

Stokes & Smith Co. offers Bulletin P-803, which lists eight different filling machines for handling pastes, powders, and granulars. This is a complete line of duplex and tandem filling stations, with weighers, conveyors, and automatic cap presses. Circle No. **137.**

Rotary Vacuum Filler

U. S. Bottlers Machinery Co. offers a handsome 16-page catalog that gives detailed specifications and photographs for its Rotary Vacuum Filler, available in 14 adaptations of six basic models. Mechanical drawings and detailed photographs thoroughly explain the operating features of each unit of this equipment that is designed to handle liquids and semi-liquids. Speed ranges for these models vary from 12 to 300/min. Container sizes adaptable to this equipment range from 1″ to 5-18″ dia., and 4″ to 12″ high. Circle No. **138.**

Shipping Case Sealer

Chisholm-Ryder Co. of Pa. offers Bulletin No. 1498, a four-page brochure that completely describes the Model F Case Sealer. This machine applies glue to preheated flaps of standard shipping cases. It features a totally enclosed glue system, a short compression unit, and a single motor drive. Specifications and a total of maximum capacities for various case sizes is included. Circle No. **139.**

Heat Sealing Polyethylene Films

U. S. Industrial Chemicals Co. offers a comprehensive booklet, "Heat Seal Characteristics of Polyethylene Films." Profusely illustrated with temperture-time charts, this booklet offers a wealth of specific information concerning the variables affecting the heat seal and their interrelationship, such as time, temperature, and pressure when applied to various weight and grades of polyethylene film. Circle No. **140.**

Parts Packaging

National Metal Edge Box Co. provides Case History #1, which enumerates the steps taken by this manufacturer of metal edge boxes to help a parts manufacturing customer reduce storage space, improve identification, and reduce labor costs. Circle No. **141.**

Package Temperature Stabilizer

Jet-Heet, Inc., offers a folder that describes "Transit Heet," a temperature stabilizer that maintains the inside temperature of a packing container at any desired level from extreme cold to high heat. Circle No. **142.**

High Density Polyethylene Extrusions

W. R. Grace & Co., Polymer Chemicals Div., has published an eight-page illustrated booklet called "Fabricator's Guide to Extruding GREX High Density Polyethylene." It discusses basic manufacturing techniques used in the manufacture of film, sheet, tubing, paper coating, and profiles and shapes from this material. Circle No. **143.**

Wrappers And Carton Formers

Package Machinery Co. offers Bulletin 170-11-4, listing 16 models of its equipment for wrapping, bundling, tray and carton forming and closing. Circle No. **144.**

Casing Equipment

Schroeder Machines Corp. offers descriptive material on its automatic case packers, openers and formers, and sealers. The Quadnumatic (a case opener, accumulator, packer, and sealer), the Formnumatic (a case opener and former), and the Casealer (a case sealing machine) are all designed with unit welded steel construction and are equipped with pneumatic drive. All three machines are pictured and described in detail. Circle No. **145.**

Packaging Adhesives

Arabol Mfg. Co. has a booklet entitled, "How to Buy Adhesives for Better Adhesion," which offers 23 basic yardsticks for selecting the right adhesive for a particular application. It points out such factors to be considered when selecting an adhesive as the material being used, the length of time an adhesive must "stick," conditions such as dry heat, dry cold, moisture, etc., with which the product may come into contact, how the adhesive is to be applied, and so on. Circle No. **146.**

Bag Former, Filler, Sealer

Triangle Package Machinery Co. offers a four-page folder describing its Model L-2 bag maker with Elec-Tri-Pak scales. This machine forms, fills, and seals bags up to 7″ wide and 14″ long at speeds ranging from 40 to 55 bags/min., depending upon the size of the pouch. The Model L-2 handles polyethylene, cellophane, K-films, single or double-wall bags, pouch paper, or Poly-Cel. Circle No. **147.**

Automatic Web Splicer

Butler Automatic Machine, Inc., has material picturing and describing its new automatic splicers, Models SPL 100 and SPL 125. These machines provide splicing for almost every type of overwrap machine. They feed wrapper rolls in a continuous flow and attach, by splicing, a new web to a depleting roll at the last full-printed panel. Both models operate at speeds ranging from 15 to 160 linear ft./min., and handle rolls with diameters up to 15″. Model SPL 125, slightly larger than Model SPL 100, handles webs with widths up to 25″. Circle No. **148.**

Conveyor Chains

Chain Belt Co. offers information on its line of conveyor chains. One new development is the Rex nylon plate top chain, N860. This conveyor chain features a nylon top plate which is said to be both wear and corrosion resistant. It also features a snap-on top plate. Their molded construction permitted designing the top plates so that there is a generous radius on the leading edge, allowing an overlap and thus reducing the chance of jams and breakage, Chain Belt says. Circle No. **149.**

Anti-Static Devices

Simco Co. has literature describing two new types of static eliminating devices, an air type shockless bar and the Neutrostat air gun, specifically designed for cleaning dust and dirt from plastic parts, plastic and paper sheets and films, textile materials, rubber, leather, and other types of surfaces to which the dust is attracted and held. In the new static bars, provision is made for simultaneously blowing off the dirt and neutralizing the static charges on both the dirt and the part being cleaned. Simco also has a folder, "Static Can Be Fun," in which its "Midget" static eliminators are pictured and described. Circle No. **150.**

Moistureproof/Greaseproof Papers

Paterson Parchment Paper Co. offers a data sheet on a new series of plastic-coated parchments identified as No. 27-33T. Combining a high gloss finish, grease resistance, moisture protection, and wet strength, this paper is available in plain or printed form. It can be used as a general purpose wrapper for foods containing both moisture and fats, as a printed outer or plain inner liner for spirally-wound tubes used for packaging foods or industrial products containing oils, as a wrapper for protecting oiled metal parts against moisture, and as a carton liner for packaging moisture sensitive products. A sample of this paper is included. Circle No. **151.**

Carton Forming Machine

Peters Machinery Co. has a bulletin describing the Peters-Ohio Midget, an automatic tray gluing machine. Producing up to 40 boxes/min, this unit is convertible from size to size in 20 min. or less. It forms most standard glued trays, telescope styles, hinged display cartons, etc. This machine is available in two models, depending upon carton size requirements, is mounted on casters for portability, and requires 36″ x 50″ floor area; it is 83″ high. Circle No. **152.**

Silicone Spray

Injection Molders Supply Co. offers

an interesting twelve-page booklet describing the properties and uses of Silicone Spray. Available in an aerosol package, this spray is used to prevent sticking on hot plates, crimpers, gluers, sealers, etc. It also reduces friction on a packaging line. Circle No. **153.**

Electronic Checkweigher

Bartelt Engineering Co. has released a four-page brochure describing its new electronic checkweigher. Variations in weight of 1/64-oz. actuate the segregation gate classifying the packages by weight at speeds up to 200/min. All electric control elements are in a separate console mounted on casters that can be removed from the area during cleaning operations. Circle No. **154.**

CLASSIFIED ADVERTISING

Our classified advertising section is intended for use by those wishing to buy or sell used packaging equipment, to employ packaging personnel, seek such employment, offer or seek business opportunities. It is not available for general advertising. Terms: Cash with order. Rates: Up to 60 words, $10.00. If boxed, $20.00. Over 60 words, $40.00 per column inch.

POSITIONS AVAILABLE

Packaging Engineers — National food processor located in Midwest is seeking packaging specialists to design and evaluate new packaging materials and packaging machinery for consumer product application. This is part of our entire product development effort. B.S. degree in chemical or mechanical engineering, plus 2 to 3 years experience in packaging desired.

Positions offer excellent personal and professional growth opportunity. Send resume with salary expectations to the address given below. Your reply will be treated strictly confidential. Please reply to Box 601, **Package Engineering,** 185 N. Wabash Avenue, Chicago 1, Illinois.

USED MACHINERY WANTED

Machinery — Rent or Buy. Standard Knapp Shipping Case Top and Bottom Gluer and Compression Unit; Standard Knapp Top Gluer only with Compression Unit. We completely rebuild and equip automatic Fillers, Screw Cappers, Labelers, Wrappers, and Automatic Cartoning equipment; Build new Conveyors, Unscramblers, Bottle Cleaners, and Stainless Tanks. What have you for sale? Phone BE-8-5941, McBrady Engineering, Box 845, Evergreen Park 42, Illinois.

FOR SALE

For Sale — Late Model Lynch Wrap-O-Matic Bar Wrapper — will resize to your product. Rebuilding and resizing Wrap-O-Matics Our Specialty. New Dietz Electric Eye and Cut Off Controls in stock. Reply to Coffman Manufacturing Corp., P. O. Box 372, Cary, Illinois.

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What we think

Should the "experts" by-pass Purchasing?

Like any contract, an agreement to buy packaging materials involves a "meeting of the minds" of both supplier and user. But how can there be a meeting of the minds when it is so often difficult for the experts in the two companies even to talk to each other? There is no easy answer to the question of how a vendor with something new can tell his story directly to the experts in a using company.

Why technical people don't get together

This is another way of asking just where the purchasing department stands in this picture. In some cases, a user company's package development people and the technical experts of a supplier find their mutual efforts to communicate thwarted by an unsophisticated purchasing agent standing squarely in the middle of the road.

In other instances a purchasing executive wonders how he can carry out his management-given mandate of centralized buying when some ingenious peddler persists in slipping in through a back door to keep his rendezvous with the company's packaging experts.

Our problem is sometimes compounded by the fact that an ill-equipped, non-technical salesman must carry the story to the non-technical purchasing agent, thus placing additional fire-stopping between the *technical* experts in the two companies.

Unfortunately, the jealous guarding of rights and privileges is not unique with purchasing. The complexities of large corporations necessitate orderly use of channels. If you doubt this you should try to name a selling price without the advice and consent of the sales department or try depositing some company money without the participation of the treasurer's office, or try hiring somebody at your own idea of a proper wage without the acquiescence of the personnel department. However, we do not wish to criticize organizational patterns. We have to have them to carry on business; without them we should have corporate anarchy.

Go through channels or take shortcuts?

Perhaps the real problem is not in trying to break the organization chart, but in seeking to bend it just a little. We all need to give a lot more thought to the question of just how can a supplier's research or technical man carry his story directly to a company's package development experts without trespassing on the freehold of the purchasing agent.

Apparently no two companies handle this situation in quite the same way. You find every shade of distinction, ranging from a flat "not interested" to the most gracious arrangement enabling a salesman to show his new package or material to all properly interested people in a company. Little wonder that a salesman is frequently bewildered and is not sure just whom he should see—except in the more enlightened companies that have worked out a suitable relationship between purchasing and package development.

Purchasing: Tell us what's new

An ideal set-up might be a company policy making it mandatory for purchasing to notify all interested parties of anything new, even to the extent of arranging a group demonstration if enough of them show interest. Doing it this way would respect the rights and privileges of the purchasing people.

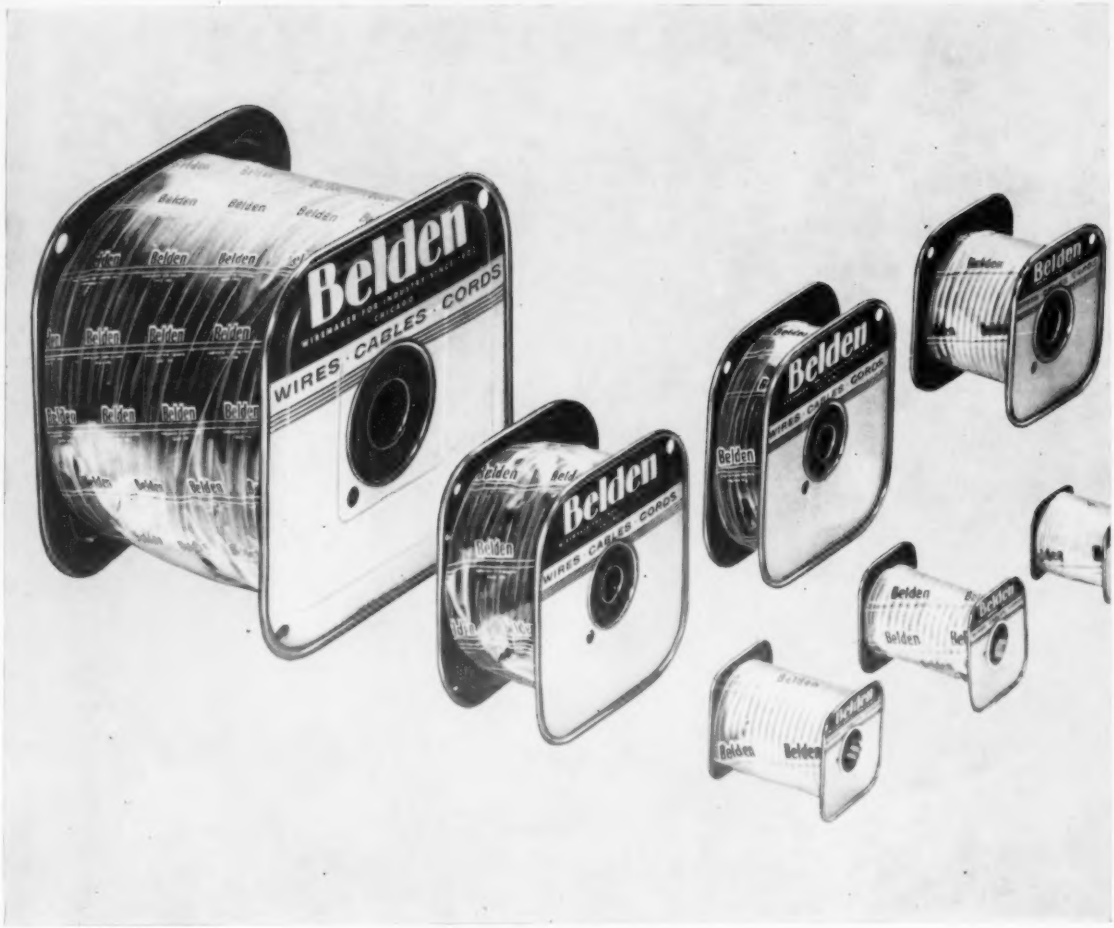
At the same time such procedures would avoid arbitrarily curtailing the rights of package development people to learn of new things. This would avoid having an unsophisticated purchasing agent (for all practical purposes a layman) in a position of having to make technical packaging decisions.

Obviously the acceptance of such a policy and reducing it to writing for all interested parties would not put an end to these long-standing difficulties. But unless we do give something of this sort a fair trial, the traditional struggle between purchasing and package development will continue, thus putting a brake on packaging progress.

All this is no reflection on a purchasing agent. The technique of buying is becoming increasingly complex. We have the highest regard for these men who know their way so well around the market place. But we do object to their being in a position to make technical packaging decisions which neither their training nor their experience qualifies them to make.

Bruce Hollingren

Editor



Plus Values tip scales for VISQUEEN TRADEMARK film

Plus values in economy, staying qualities and merchandising tipped the scales for VISQUEEN film as a packaging material at Belden Manufacturing Company, Chicago. This top-flight manufacturer of cables and wires who formerly used paper, found important advantages in selling and economies in wrapping its consumer products in moisture proof VISQUEEN film.

"VISQUEEN film's transparency provides better merchandising at the point of sale and stimulates impulse buying," said Warren Stuart, sales development manager for Belden.

VISQUEEN film provides a superior package wherever a flexible material can be used. Write us, or mail the information request tag for details.

information request tag

VisQueen

Trade Mark

clip this tag—#PE6

attach to letterhead, mail.

VISQUEEN *film—the first and foremost polyethylene film. A product of the longer experience and outstanding research of* **VISKING COMPANY** *Division of* UNION CARBIDE *Corporation*
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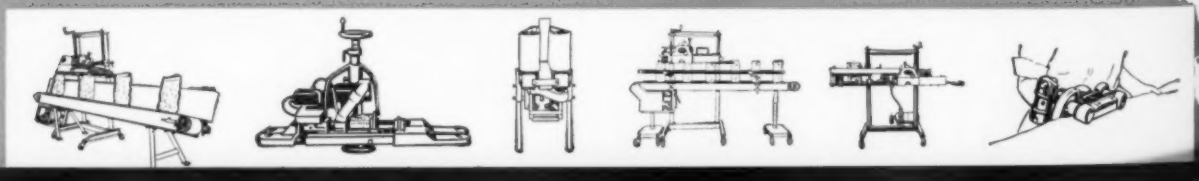
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